

# INTERSTATE MEDICAL JOURNAL.

VOL. XI.

FEBRUARY, 1904.

No. 2.

## ORIGINAL ARTICLES.

### WHAT VALUE HAS THE KNOWLEDGE OF PSEUDO-HERMAPHRODITISM FOR THE PRACTITIONER?

BY DR. FRANZ VON NEUGEBAUER, of Warsaw, Russia,

GYNECOLOGIST TO THE EVANGELICAL HOSPITAL.

In the embryo the germinal center of the sexual ducts—the excretory ducts of the products of the sexual glands—is bisexual in as much as every embryo possesses both Wolffian and Muellerian ducts. The germinal center of the sexual glands—*Keimdruesen*—is apparently not differentiated in the first weeks of fetal life, so that they may develop into either ovaries or testicles; or indeed they may remain in a rudimentary condition so that not even the microscope can answer the question in what direction their further evolution would have taken place. Such individuals are hence asexual, or as Virchow terms them—*homines neutrius generis*.

The sexual glands, therefore, develop in one direction—either they become testicles or they become ovaries. The presence of both ovary and testicle in the same individual has been frequently asserted, but the cases reported thereof (Heppner, Schmorl, Obolonsky, Blacker-Lawrence) have not stood the test of closer microscopical examination. Until lately, therefore, the simultaneous occurrence of testicles and ovaries, or rather of one testicle and one ovary, was not recognized by the majority of investigators. Theoretically no one can deny the possibility of one gland developing into an ovary, the other into a testicle, or even that on each side an ovary and a testicle should develop; yet in practice no case of this kind could be confirmed by the microscopical findings. On the other hand, two very important observations have been recorded in which in the same sexual gland one part showed the structure of a testicle, the other the structure of an ovary. These observations were made by v. Salen and Professor Garre (the latter case described by Simon). These two cases must all alone overthrow the previous, almost universal, idea that no case of true hermaphroditism had as yet been observed in man. But such a joint appearance of ovarian and testicular elements in one gland—ovotestis—is far from proving the postulate that one and the same individual is capable of impregnating another and also of conceiving. In neither case was the ovarian or testicular tissue so far developed



that it could have functionated. As long as the occurrence of such so-called "Zwitterdruesen"—ovotestes—was denied as well as that of sexual glands of opposite sex in the same individual, one could put aside the former division into *hermaphroditism lateralis* (on one side a testicle, on the other an ovary); *hermaphroditism unilateralis* (on one side a testicle and an ovary, on the other, either a testicle or an ovary); *hermaphroditism bilateralis* (on each side both testicle and ovary). Nowadays, however, this point of view has been changed.

If we except the two solitary observations just mentioned which represent a true anatomical, if not a functional hermaphroditism, there remains on the opposite hand the whole category of pseudo-hermaphroditism, a condition which, moreover, is far more frequent than is generally accepted. I have been able to collect thus far not less than 930 single observations in the world's literature, of which 38 cases are my own.

Pseudo-hermaphroditism is characterized by the paradoxical occurrence that the sexual ducts and the external genitalia do not develop according to the same type as the sexual glands of the individual, but according to the opposite, hence heterosexual type; or, on the other hand, both male and female generative organs may develop, the one more, the other less completely. The external genitalia at the same time develop either in accordance with the sexual gland or contrary thereto, hence heterosexual.

The evolution of the male generative organs *per excessum* usually goes hand in hand with that of the female generative organs *per defectum* or *vice versa*; or, again, only those sexual ducts that do not correspond to the sexual gland attain development. With comparative frequency do we find the development so tardy that even the microscope is unable to affirm positively either a male or female character to the sexual gland; how much more impossible is it, therefore, in such a case for the physician to determine the sex—neither sex predominating—since sex is solely to be determined from the anatomical character of the sexual gland.

Waldeyer speaks of the germinal center of the sexual glands as bisexual; Benda as feminine, since the masculine type presents itself as a development of the feminine type, modified partly progressively, partly retrogressively. Siegenbeck van Heukelom proposed to differentiate between glandular and tubular hermaphroditism. The glandular form consists of the appearance in one and the same individual of sexual glands of opposite type, thus: two testicles and two ovaries, or one testicle and one ovary, etc. Tubular hermaphroditism consists in the simultaneous development of both Wolffian and Muellerian ducts or of only that duct that does not correspond to the sexual gland; hence the vasa deferentia in the presence of ovaries, and the ducts of Mueller in the presence of testicles. The external genitalia may be primarily



undifferentiated, developing either wholly according to one or wholly according to the other type. The essence of pseudo-hermaphroditism lies, therefore, as aforesaid, in the paradoxical incongruence of the sexual glands on the one hand, and the sexual ducts or external genitalia on the other.

A general knowledge of the embryology of the human genito-urinary system is taken for granted. The following table will, however, serve to make clear certain points:

COMPARATIVE EMBRYOLOGICAL TABLE.

| MALE GENITALIA.                                                                                                                                                        | UNDIFFERENTIATED FETAL GENITO-URINARY ORGANS.                                                                              | FEMALE GENITALIA.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Testicles (Ampulla seminales canaliculi seminiferi).                                                                                                                   | Germinal epithelium (sexual gland).                                                                                        | Ovaries (Graafian follicles).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| (a) Epididymis, rete testis, tubuli recti, vasa efferentia, testis, hydatis pedunculata epididymidis.<br>(b) Paradidymis (Giraldi's organ, vasculum aberrans Halleri). | Urnierae (Wolffian body = mesonephros).<br>(a) Upper portion = pars sexualis.<br>(b) Lower portion = pars meta-nephrotica. | (a) Epooophoron (parovarium) (Rosemueller's organ) Markstraenge of the ovary, rete ovarii and hydatis pedunculata ovarii.<br>(b) Paroophoron.                                                                                                                                                                                                                                                                                                                                                                                             |
| Tail of epididymis on both sides, vasa deferentia, seminal vesicles, ejaculatory ducts.                                                                                | Wolffian ducts.                                                                                                            | Malpighi-Gartnerian ducts, running centripetally in the broad ligaments, entering the lateral walls of the uterus at or slightly above the internal os, and running along this region up to the vaginal portion of the uterus, where several lateral branches analogous to the seminal vesicles are given off, then running along in the lateral vaginal walls and converging in the anterior vaginal wall to the urethral orifice. Both ducts are normally absent, lead occasionally, however, by partial persistence to cyst formation. |
| Hydatis sessilis testiculi of both sides, prostatic sinus in the caput gallinagis (utriculus masculinus vesicula prostatica).                                          | Muellerian ducts.                                                                                                          | Tubes with fimbria and hydatis of Morgagni, uterus, vagina.                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Kidney.                                                                                                                                                                | Metanephros.<br>(Permanent kidney).                                                                                        | Kidney.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |



COMPARATIVE EMBRYOLOGICAL TABLE—CONTINUED.

| MALE GENITALIA.                                                           | UNDIFFERENTIATED FÆTAL GENITO-URINARY ORGANS. | FEMALE GENITALIA.                                                                                                                                              |
|---------------------------------------------------------------------------|-----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hunter's gubernacula.                                                     | Ligament of Urniere.                          | Ligamenta rotunda uteri, ligamenta ovariorum propria.                                                                                                          |
| Pars membranacea urethræ.                                                 | Sinus urogenitalis.                           | Vestibulum vaginæ.                                                                                                                                             |
| Penis.                                                                    | Genital tuberele.                             | Clitoris.                                                                                                                                                      |
| Scrotal sack.                                                             | Genital arches.                               | Labia pudendi majora.                                                                                                                                          |
| The lateral walls of penis and urethra and the corpus cavernosum urethræ. | Genital folds.                                | Labia pudendi minora, the so-called bride masculine, bride penienne, the shining band of tissue running from the urethral orifice to the base of the clitoris. |

## FURTHER HOMOLOGIES.

Corpora cavernosa penis = Corpora cavernosa clitoridis.

Glans penis = Glans clitoridis.

Præputium glandis = Præputium clitoridis = superior branch of the bifurcation of labia minora.

Frenulum præputii glandis = Frenulum clitoridis = inferior branch of the bifurcation of labia minora.

Bulbus urethræ = Bulbi vestibuli.

Glandulæ bulbo-urethrales Cowperi = Bartholinian glands.

Prostate = Skene's ducts.

Lacunæ Morgagni = Lacunæ Morgagni.

Seminal vesicles = Outgrowths of the Wolffian ducts in the lateral walls of the cervix uteri.

Littre's glands = Glandulæ minoris vestibuli (cryptæ juxta urethrales).

Urethra { Pars proximalis vesicæ = Urethra.  
 { Pars prostatica = Urethral orifice.  
 { Pars membranacea = Vestibulum vaginæ.  
 { Pars cavernosa = Groove along lower surface of clitoris.

Plica cutanea sinus prostatici (veru montanum) = Hymen.

Sinus prostaticus = Vagina.

Vasa deferentia = Gartner's ducts.

The hydatid sessilis testis Morgagni, according to Fleischl, Loewe and Waldeyer, corresponds to the peripheral end of the ducts of Mueller.



The hydatid of Giraldi (hydatis pedunculata epididymis), according to Siegenbeck van Heukelom, corresponds to the peripheral end of the tube.

S. Pozzi regards the labia pudendi majora as analogous to the "*conche superficielle*" of the scrotum, the labia minora as analogous to the "*conche profonde*" of the scrotum.

For practical purposes it is advisable to retain the old subdivisions of pseudo-hermaphroditism adopted by Klebs: Masculine pseudo-hermaphroditism (androgynoid formation) and feminine pseudo-hermaphroditism (gynandroid formation). Pseudo-hermaphroditism can be either internal, external or complete.

### 1. PSEUDO-HERMAPHRODITISMUS FEMINUS.

(a) *Internus*.—External genitalia, female, normal; ovaries present; uterus, tubes and vagina (ducts of Mueller) well-developed or more or less rudimentary; side by side more or less rudimentary or fully developed internal male genitalia, such as vasa deferentia, prostate, seminal vesicles. (This form of pseudo-hermaphroditism is the rarest of all.)

(b) *Externus*.—A more or less hypertrophied, erectile clitoris, that occasionally is wholly or partially perforated by the urethra, resembling a penis; the more or less completely agglutinated labial folds resemble a scrotum; if, besides this, there appears in one or both inguinal canals or in front of the external ring or in the labial folds a hard body resembling a testicle, it is readily possible for a mistake in sex to occur. Such bodies formed at the above-mentioned places may be ectopic ovaries, hydrocele or hematocele of the vaginal process of the peritoneum or neoplasms of the round ligament protruding beyond the inguinal canal. In some cases the clitoris is merely hypertrophied, not perforated by the urethra or erectile; the vulva otherwise normally formed; the agglutination of the labial folds extending upward to a greater or less degree. Occasionally only one opening representing the sinus urogenitalis or canalis urogenitalis can be detected, the joint opening of urethra and vagina, or the urethra may enter into the vagina or the vagina into the urethra. Such cases can readily be mistaken for a peno-scrotal hypospadias.

(c) *Compleus*.—External genitalia resemble male organs more or less; ovaries present either in the abdomen or misplaced in the inguinal or labial region; beside more or less developed ducts of Mueller there are found on one or both sides structures in greater or less state of development arising from the Wolffian ducts.

### 2. PSEUDO-HERMAPHRODITISMUS MASCULINUS.

(a) *Internus*.—(This form is far more frequent than the corresponding form in the female.) External genitals normally masculine; in the pelvis, accompanying a more or less defective formation of the internal male genitalia, are found more or less completely developed Muellierian ducts or their derivatives, uterus, tubes, ligaments and a vagina that often empties into the urethra at the caput gallinagis, testicles present either in the scrotal sack, in the inguinal canal or in the abdomen. One or double sided cryptorchismus is the usual accompaniment of cases in



which a well-developed uterus is present. *In such cases the cryptorchismus is regarded as the result of the testicles, lying where the ovaries lie in the female, united with one another by a muscular band of tissue, represented by the tubes and uterus. This band is too short to allow both testicles to leave the abdominal cavity.* If one descends into the scrotum it often drags with it the uterus or the tube of the same side; the other testicle remains in the abdomen. Usually, however, with a well-developed uterus both testicles remain in the abdomen.

(b) *Externus*.—(This is the most frequent form of pseudo-hermaphroditism.) Testicles are present either descended or retained in the abdomen or inguinal canal. Hypospadias of the penis with rudimentary development of that organ; also hypospadias scrotis, and hypospadias penoscrotalis, also termed perinealis, resembling the vulva. Mistakes will occur the more easily if the fissured penis is no larger than a clitoris, and if the sides of the divided male urethra resemble the labia minora. There are cases in which the pubic region of a male hypospadias may so resemble a vulva that no suspicion of an "erreur de sexe" would arise. Usually, only the penis shows complete hypospadias, the scrotum only in its upper portions. In rare cases, however, we may have a normally built penis and a divided scrotum showing a vaginal opening (case of Maude, the only one on record). The internal genitalia in these cases is masculine and either partly or wholly developed, thus vasa deferentia, epididymis, seminal vesicles, prostate, etc., present.

(c) *Complectus*.—Testicles present. Beside the external genitalia, apparently feminine, we find the Wolffian ducts or their derivatives in greater or less part developed, beside a more or less complete development of the ducts of Mueller or their derivatives. The vagina empties usually in the caput gallinagis of the urethra, but may also empty "in scroto fisso" externally and the urethra then empties into the vagina.

A very rare form of malformation are the cases in which there is present a juxtaposition of hetero-sexual external genitalia, where, for example, a vulva is found by the side of a scrotum and penis. Only six of these cases have been reported. Their occurrence is associated usually with division of the lower end of the vertebral column or dipygia. I described an interesting case of this sort in my work on *reduplication of the external genitalia*. My case is a unicum in so far as there was found a rudimentary penis or possibly a hypertrophied clitoris on the perineum beneath a normally formed vulva, thus below the fenulum labiorum majorum. This embryologically puzzling observation occurred in a woman who had borne children.

To these anomalies in the evolution of the genito-urinary system must be added the *variations in the external appearance of the individual* that is at times homologous, at times heterologous to the sexual gland; that is to say, the *secondary sexual characters*, such as size, development of the skeleton, evolution of the pelvis and of the chest; the type of respiration, sometimes abdominal, sometimes costal; the kind of facial expression; the masculine or feminine distribution of hair-development,



the varying quantity of hair on the face, the body, the abdomen, the pubis, the perineum, the extremities; the voice, at times masculine, at times feminine, with the corresponding development of the throat and the characteristic ossification of the thyroid cartilage; the relative size of the extremities; the absence or full development of the breasts; the feminine panniculus adiposus subcutaneus developed to such a degree as to obliterate the contours of the muscles and round off the outlines of the body or the absence of this layer in the male bringing the muscular outlines into prominence; the presence or absence of a cremasteric reflex, etc.

Similar to the secondary sexual characters we may find the *psychic and sexual sensations* either corresponding to the sexual gland or contrary thereto—that is, either *homologous* or *heterologous*. Together with the above peculiar conditions that are of import and interest in the study of pseudo-hermaphroditism must be considered a group of symptoms which are termed *molimina menstrualia* and have heretofore never been considered in any compilation in pseudo-hermaphroditism, but warrant careful investigation.

Pseudo-hermaphroditism is by no means to be considered as a localized embryological anomaly of the genito-urinary system, but the latter are rather to be looked at as a portion of a general deformity as is seen by the great variations in the secondary sexual characters in hermaphrodites. Virchow was the first to call attention to this point. Hence, we can with assurance exclude as the cause of the anomaly in the genito-urinary organs any external agencies influencing development, such as intrauterine amputations or mechanical disturbing influences as in clump-foot, split pelvis, spina bifida, etc. *The cause of pseudo-hermaphroditism in man can only be sought in those centers that determine and regulate development.* Some authors have even gone so far as to say they could distinguish the development of a different sex in each half of the body or of the face; either that the right side was masculine and the left feminine; one breast with mammary gland developed as in a woman, the other with no gland as in a man; the upper part of the body female, the lower male in character, or *vice versa*. It is a problem of the future to investigate these matters more in detail, a possibility only where a large number of cases have been collected, as in my list. Unfortunately in the reports thus far published all these interesting particulars have received but scant, if any, attention.

If we regard pseudo-hermaphroditism from an *embryological* standpoint, it does not seem so remarkable since the various anomalies up to the earliest stages can be explained either as delayed development or excessive development. We have still, however, left unanswered the question: what is the final cause of heterosexual evolution? In all likelihood *nutritive conditions, associated with the arrangement of the arterial blood-supply are an important factor* in this. Moreover, a *psychic influence*



in development cannot be gainsaid; similarly *hereditary influences*, inasmuch as the same malformation, the same kind of hermaphroditism has been found repeatedly in father, son and grandson and in two, three or four children of the same parents.

Of great importance is the variety of *sexual feeling in hermaphroditism*. Sexual life is at times perfectly normal, at times absent, slightly developed or perverted, hence homosexual. In fact, there are some hermaphrodites who have intercourse with both sexes. In many cases the sexual desire was that of a man, then later transformed into that of a woman, or *vice versa*. Krafft-Ebbing proposes the following explanation of homosexual feeling. He distinguishes three subdivisions in the genital apparatus: (a) *sexual glands* with their excretory ducts and copulatory organs; (b) *spinal centers* which work partly quieting, partly exciting and stimulate nutrition, secretion, vascularization, erection and ejaculation; and (c) *cerebral areas* whence originate all the complicated psychosomatic processes that are termed sexual life, sexual sense, sexual passions. These three divisions, joined to one another through nervous channels, are under the closest functional interrelations. The source of all three divisions in man is said to be bisexual. The psycho-sexual center does not develop until after puberty. The sexual glands develop independent of the psycho-sexual center. Normally, only one-half of the bisexual source develops in man, the other is retarded in growth, remains latent. Under certain pathological conditions in rudimentary growth of the sexual glands, either the psycho-sexual center is not at all developed or only that half which should remain latent or has remained latent thus far; that is to say, in the person with testicles, the feminine, and *vice versa*.

*In the development of the psycho-sexual center, of psycho-sexual feeling, the greatest influence is played, as experience has shown, by education, example and suggestion, and frequently the character of psycho-sexual feeling of a hermaphrodite depends upon the circumstances and surroundings in which he has been raised. The influence of suggestion and of environment is exhibited in many a case where a male hermaphrodite, raised as a girl, had a feminine sexual desire toward men and, when it was proposed upon finding her sex to be masculine, to compel her to wear male attire and be treated as a man, she exhibited the greatest horror of such a change in her social status and demanded the immediate removal by castration of her sexual glands. In many cases the homosexual desires developed by suggestion in the case of a male hermaphrodite raised as a girl would prove but temporary in so far as sooner or later the true masculine desire for intercourse would suddenly break forth. In very many cases the psycho-sexual feeling is very vague—in fact, not at all fixed—or it undergoes a change once or even oftener. Many hermaphrodites are sexually indifferent, nonchalant toward both sexes, apathetic; others again are libidinous and may die as a result of*



sexual excesses. Many have held intercourse with both men and women, even sodomy is reported in the statistics of pseudo-hermaphroditism. Often a masculine hermaphrodite, wrongly married as a woman, would keep in other quarters one or two mistresses, or a person who for thirty-five years of married life held intercourse as a woman, would upon the death of her husband cohabit only with girls.

Of particular interest is the case of Berthold, in Koenigsburg. He recognized male vocal chords in a young girl who consulted him concerning hoarseness, examined the patient from head to foot and established the presence of an inguinal hernia containing testicle and epididymis, hence an "erreur de sexe." The girl received this announcement with great confusion, was greatly embarrassed, would not believe a word of it and did not return again. Seven years later Professor Berthold received an urgent appeal by letter from Marie S. to assist her to change her manner of life to that of a man, saying she had assured herself of the truth of his statement and wished to obtain as soon as possible acknowledgment of her masculine rights in order to marry another girl with whom she had been keeping company for some time. Just as in this case so in a large number of others the masculine nature of a male hermaphrodite raised as a girl would suddenly break forth. Frequently such a girl would ask for masculine rights in order to marry a girl whom she had caused to become pregnant.

It is certainly remarkable that not less than twenty-nine female *prostitutes* were either during life or post-mortem found to have an error of sex. Many of these unhappy beings had intercourse with both men and women. The *mental condition of a hermaphrodite* may be perfectly normal; often, however, it is diseased, and certainly in many cases there is a *relationship between the sexual malformations and the diseased mental condition.*

The grave influence a genital malformation may have upon the psychic condition is seen in a case from England. A student with undescended testicles heard in a lecture by Cowper that this condition meant impotence. He left the lecture hall, went home and shot himself. The sensation of being neither man nor woman, the shame and perpetual fear that the carefully guarded secret might become known and make the individual the object of ridicule and laughter, robs him of mental rest and sleep. He broods and broods over his condition, dares not discuss it with anybody, considers himself an outcast in society, seeks solitude, becomes weakened bodily by his continual mental care and sleepless nights, becomes suspicious and skeptical, irritable, revengeful, at times becomes a criminal, or, on the other hand, he becomes careless, melancholy and ends his life by suicide. I myself have related of four attempts at suicide by male hermaphrodites raised as girls—three times with fatal result. It is my firm conviction that even *laying aside any hereditary mental taint a normal individual as soon as he becomes*



*conscious of his sexual malformation in puberty can at times become despondent, even insane, merely from his mistaken social position.* It is, however, not to be denied that there are cases where a psychic anomaly is inherited without any causal relations to the malformation. Frequently a record of such diseases as insanity, alcoholism, syphilis, epilepsy, tabes, etc., can be obtained in the previous history of father and mother. Not a few hermaphrodites end their life in an insane asylum. I have collected twenty two cases of insanity coincident with pseudo-hermaphroditism. Hysteria, epilepsy, progressive paralysis have all been repeatedly observed in hermaphrodites. One French alienist, as a result of his experiences, demands an examination of the sexual organs in every case of insanity. In medical jurisprudence hermaphrodites are usually regarded as degenerates. Matzner recently related the following legal case: A man was accused of criminally assaulting in a wood forty-one-year-old Mary G. This lady had on a previous occasion been obliged to put the care of her fortune into other hands on account of her feeble mental powers. Examination revealed that Mary was a masculine hermaphrodite. Since there was no eye-witness and the accusation rested wholly on the statement of a weak-minded person, the case was *nolle prossed*.

*What fatal consequences a mistake in sex can cause* is well shown in my table of nine hundred and thirty cases in which such a mistake was made many hundreds of times. Not fewer than *sixty-eight marriages were concluded between people of the same sex.* In fifty-nine of these cases the sex of the wife was found to be male—a male hypospadias raised as a girl; four times a post-mortem revealed the fact that a man who had lived in perfect happiness with his wife, possessed ovaries. The most remarkable case of this kind was that of Karl Menniken, who from the twenty-seventh to the fifty-seventh year of his life was married as a man, and yet was a woman, for a post-mortem showed as the cause of death cancer of the uterine cervix.

In five cases the sex of a woman was declared to be in doubt, with a likelihood of masculine pseudo-hermaphroditism, but no proof through operation or autopsy. In 1885 there was a double legal contest of some interest described by Badaloni: the marriage of Maura Faustine, held ten years before, when she was twenty-one years of age, was dissolved because in the first place she was a male hermaphrodite and could not copulate as a woman; further, also, because she had intercourse with girls without her husband's knowledge and hence caused him to be despised by his fellow-men. The papal curie dissolved the union as illegitimate. After the separation Maura, the divorcee, now a man, sued her brother for half of the paternal estate, the brother in turn accusing her, or rather him, of seducing his wife.

The midwife Maerker, accused of assaulting a pregnant girl, proved to be a male hermaphrodite. Under the pretext of correcting a malposi-



tion of the child, she had held intercourse with the girl. Soon other similar charges were preferred against her and she was condemned for unnatural practices. Later, however, she was pardoned by the king of Saxony, as she was already unfortunate enough in her congenital deformity, but her license to practice midwifery was revoked.

On eighteen occasions a betrothal was dissolved at the last moment on establishing the male sex of the bride; one of these girls had been engaged three times.

*Many hermaphrodites have come into conflict with the courts* on account of rape, assault, adultery, incest, malpractices on children, and even sodomy. In 1856 Tracel described a trial concerning an unmarried cook who had been made pregnant by a likewise single thirty-seven-year-old house-maid. The latter proved to be a male hypospadias. The child of this union showed a similar deformity. In 1903 I performed a herniotomy on a twenty-six-year-old unmarried cook, who had been accused of bad practices with other women a number of times, to determine the sex. I found testicle, epididymis and seminal duct in the inguinal canal, closed the wound and then testified that in this case the sex was male with peno-scrotal hypospadias, erections and ejaculation. The courts immediately ordered a change in the manner of life of the woman.

Thrice have hermaphrodites committed murder. In 1894 Wilhelmina Mueller, a teacher, was hung for having sexually abused a boy and then poisoned him with chloral. Post-mortem revealed the teacher to be a male hypospadias.

In another case in which I served as expert, the case was that of attempted suicide of an eighteen-year-old girl. The girl had put strychnia in the soup. A nine-year-old brother died as a result. The girl and her mother recovered. I established a male hypospadias peno-scrotalis with ejaculations, normal sperma and the presence of a vagina 9 cm. long. Since only the attempted suicide was proven and no reason ascribed for trying to kill mother and brother, the punishment inflicted by the courts concerned only the former event, and on account of the age of the person, consisted only of penance and the guardianship of the hermaphrodite by his parents.

The superintendent of a girls' boarding school called her physician one night because she had caught two of her wards in the performance of unnatural practices. The result of an examination showed male pseudo-hermaphroditism in one of the girls. To avoid scandal this one had to leave the institution at once. Little breaches of morality and of decency have occasioned many a conflict with the school authorities on the part of a male hypospadias raised as a girl. With the police, also, they occasionally get themselves in trouble, but at times a hermaphrodite has been arrested without any cause whatever. Thus, in December, 1901, the policeman on guard at the railway station at Pilsen arrested a girl, Marie Karfiol, who had just alighted from a train, on suspicion of



being a man in disguise. Although the papers of Karfiol showed her to be a woman, she was taken to the city hall and there examined by a physician, who established an error of sex—male hypospadias. The suspicion of the custodian of public safety was, therefore, a just one. Marie Karfiol was robbed of her flowing hair, was dressed in male attire, and returned, much to the surprise of her masters, as a man.

Cases have also occurred where a male hermaphrodite, through some error of sex, became the victim of a crime. The following case comes from Japan. A man murdered his wife and, to escape punishment, fled. On opening the body of the woman she was found to be a male hypospadias.

Bellin also describes a case where two men attacked a girl on the highway, and, after knocking her senseless, committed rape. As the girl regained consciousness she noticed a severe burning pain about the rectum and blood upon her clothing. In the legal proceedings resulting therefrom the girl proved to be a male hypospadias and without vagina. The two men had, therefore, committed pederasty.

As has been already mentioned, *frequently the most careful microscopic investigation of the sexual glands, whether removed by an operation on the living or in an autopsy, is, on account of rudimentary development, unable to establish the sex.* At times nothing can be distinguished but a connective tissue stroma, interspersed with blood vessels and here and there a little cyst, etc., but no traces of a characteristic morphological element, not to mention Graafian follicles or canaliculi seminiferi.

The correct decision where the sex is in doubt, except where ejaculation of sperma or menstruation have solved the problem, can only be made by the examination of the sexual glands, or at least of one of them.

*In the majority of cases the sex becomes evident at the time of puberty.* The newborn child is called a girl, say by the midwife attending because she passes urine like a girl, because labia are present. When the child, let us say, is twelve years old, it has pain in one inguinal region, and a rupture is diagnosed. After a year the same thing occurs on the other side. Erections of a clitoris grown considerably in size occur. At sixteen the voice begins to break, a mustache makes its appearance, pollutions may occur or onanism may be practiced. The suspicion of the parents, raised at the onset by the peculiar formation of the genitalia, now becomes certainty and the mistake in sex is cleared up. In other cases the physician is called to decide the question and usually succeeds, but by no means in every case. In one case I personally could determine an "erreur de sexe" only after eleven years' observation, after which time the patient having passing her twentieth year, a testicle appeared in the groin and erections and pollutions took place. In the newborn this is a more serious problem. *In difficult cases it is best to leave the sex undecided and have the person for the time being*



*raised as a girl.* It is by such means easier to protect the individual (on account of the method of raising girls), from the unpleasant social results of this deformity. This advice of Lawson Tait, I think very wise: "*Assuredly the male hermaphrodite raised as a girl will find it easier to change his manner of life than the female hermaphrodite raised as a man.*" The method has, however, its disadvantages. Let us suppose that following the advice of Lawson Tait and opposing that of Ahlfeld, the parents raised their child as a girl. The girl attains her sixteenth year, the male sexual desire is aroused, novels are read and the disguised youth is placed in a boarding-school with twenty-four girl pupils whose charms are laid bare mornings and evenings while washing and dressing. Is it surprising that under such circumstances he will with difficulty be able to restrain his passions? Considerable talk was created by such a case in Paris. A male hypospadias raised as a girl became foreman in a factory where only girls were employed and soon became a wolf among sheep; similarly dangerous was the position of an abbess who lived up to her death in a cloister, and whose sex post-mortem was found to be male.

Such a child must therefore be watched with the greatest care and the mental development observed to avoid harm. One has only to read the celebrated autobiography of the suicide, Alexina B., by Prof. Tardieu. Raised in a girls boarding school, Alexina did not at first realize that she was a man but had used her male sexual organs to seduce the daughter of the directress, who slept with her. After many struggles with her conscience, confession. A medical examination cleared up the "*erreur de sexe*" in her twenty-second year, the mode of life was changed by order of the bishop of Toulouse, male attire procured and the former teacher left the institution in which she lived from childhood up, to become a railway conductor. Five years later the unfortunate being committed suicide in a wretched attic in Paris. One should imagine that the mental condition of such a person, after the rights of manhood had been granted her, would be more peaceful and contented. In this case it was just the contrary. Despair drove her to the grave. Whoever is interested in the psychological side of pseudo-hermaphroditism should not fail to read this little book.\*

A very similar autobiography of an eighteen-year-old male hermaphrodite raised as a girl is in my possession, but I cannot yet publish it, as the individual, who also attempted suicide, is still alive.

The collection of cases in which the surgeon is concerned with pseudo-hermaphroditism, is greater than is usually thought. Frequently will the question be put to him by parents of a newborn child whether the sex be male or female. Since the feminine appearance of the external

\*Tardieu: Question medico legale de l'identite dans ses rapports avec les vices de conformation des organes sexuels, contenant les souvenirs et impressions d'un individu dont le sexe avait ete meconnu. Paris, 1874.



genitals in male hermaphrodites, the presence of a peno-scrotal hypospadias, depends on delayed development, it is of the first importance to search for the presence of a testicle, epididymis or seminal ducts. To palpate a prostate per rectum in a newborn child is not only difficult but inconclusive, since neither its absence or presence would help to determine the sex. *If, however, organs corresponding in size, shape and consistency to testicle, epididymis and seminal ducts be found in the lateral folds or higher up at the opening of the inguinal canal, one can be assured that the sex is male*, even if beneath a female urethra the vaginal opening is to be seen surrounded by a hymen and labia minora. One cannot speak as yet of a cremasteric reflex in the newborn, neither can the palpation of the seminal ducts at the pelvic arch be of as much importance then as at puberty. Klebs declared the presence of labia minora as speaking for a feminine sex. This is a mistake. I have seen many male hermaphrodites whose external genitals resembled a perfectly formed vulva with large and small nymphæ, hymen, vaginal orifice and absolutely no enlarged clitoris. That should not be forgotten.

If it be impossible to feel testicle and epididymis in the newborn, the only proper thing is to postpone the decision, demand another examination later on, even as late as puberty, or *demand a diagnostic operation*. If cryptorchismus be present, the decision should unquestionably be put off unless one wishes to make a mistake such as happened to me with my colleagues, Krajewski and Anders. We, a surgeon, a pediatrician and a gynecologist, had all three declared a twelve-day-old child of doubtful sex, to be a male hypospadias with lateral cryptorchismus. A few days later the child died and on post-mortem proved to be a female hermaphrodite, noteworthy only because of the striking hypertrophy of the clitoris. Peculiar was also the prominence of the vulva beyond the body walls of the pelvis, which I have never observed in male hermaphrodites. Whether this appearance is observed in other newborn female hermaphrodites, or is pathognomonic, I cannot say.

Very often the hermaphroditic deformity is associated with others. The most frequent complication is congenital inguinal hernia. Besides this there has been observed spina bifida, hydrorrhachis, hydrocephalus, extrophia vesicæ, pelvis fissa, polydactylie, atresia ani, atresia urethræ, epispadias urethræ, etc. Many children burdened with such mixed deformities, are born at full term dead or living, but if the latter, not viable, so that they soon perish. In a few cases life can be preserved by operative means, as in atresia of the anus. It is interesting to note that mistakes of sex have arisen in extrophy of the bladder. Not less important is the fact that four times a hermaphrodite having testicles and an extrophy of the bladder was raised as a girl because by wearing skirts she could more easily keep herself clean. And it is also interesting that one such male hermaphrodite with peno-scrotal hypospadias, upon being clothed in male attire for the first time, ripped up the seam of his trous-



ers the very next day so that he could without much undressing pass his urine like a woman.

The second demand made on the surgeon is *to pay attention to every case of inguinal hernia appearing early or late in a girl*. How many cases do I know of where through an error of sex in a girl, or rather in a male hermaphrodite of six, ten, fifteen, twenty, thirty years, the delayed partial descent of the testicle was mistaken by the surgeon for an inguinal hernia. The child would be forced for years to wear a truss and be scolded as disobedient, if he tore loose the hated supporter that made an intolerable pressure on his sensitive testicle. Beside these false hernias we have also true ones. Leaving out of consideration hernias of intestine, omentum or bladder, there are important labial misplacements of uterus, tubes and ovaries; moreover, the cases where in a man, *i. e.*, male hermaphrodite, with inguinal hernia, there was found in the sack a uterus uni- or bi-cornis, as in the following case of Saenger: In a herniotomy on an unmarried teacher of thirty-two years, who had never menstruated, Saenger found in the inguino-labial sack a uterus of normal size, together with a tube of normal appearance, a parovarian cyst of considerable dimensions, and a body that he first took to be an ovary. The microscope, however, later showed the body to be a testicle. Strangely enough Saenger had just previously in a twenty-three-year-old servant girl operated on an ovarian hernia and removed a testicle, thus establishing an "erreur de sexe." Up to the year 1903 I collected fifty-eight operations for rupture, *i. e.*, herniotomies, done on hermaphrodites with astonishing results as to mistakes in sex. In forty-two cases an "erreur de sexe" was established; three times a herniotomy done on a married woman for misplaced ovary, revealed a testicle in the sack; thirty-six times testicles were found in the hernias of young or older girls; once the operation established a feminine sex in a person raised as a boy. Four times a herniotomy was performed directly for the purpose of eliminating doubt as to sex. The temporary exposure of the sexual gland showed a mistake in sex. These are the cases of Porro, Tillaux, Pean and v. Neugebauer. Several individuals were operated on a number of times, thus first a herniotomy on one side and several years later on the other side. Once there was removed from the inguinal region what was thought to be a swollen lymph-gland (case of Poore-Matthews). Seven years later the microscopic examination of the lymph-gland removed at that time disclosed the fact that it was a testicle.

Beside these false and true hernias, "hydrocele muliebris" was occasionally operated on, and, after removal of the hydrocele fluid, a testicle discovered.

In the differential diagnosis of the contents of a labial fold or the half of a divided scrotum in cases of doubtful sex, attention must be called to the fact that the testicle of a male hermaphrodite can readily be held for the ovary of a woman; secondly, that testicles have been thought to



be felt where a post-mortem showed, as in Virchow's case, only the snared-off preinguinal portion of the processus vaginalis peritonei on each side. Virchow himself did not regard the little almond-sized bodies felt in the labial folds of Clara Hacker, each with a cord passing upward through the inguinal canal, as testicles, since he could not palpate any epididymis. He hence considered them ectopic ovaries, and declared Clara Hacker a girl. A post-mortem cleared up the matter: myxosarcoma of the right ovary, the left ovary normal; the two bodies which Virchow was inclined to take for ectopic ovaries, since they swelled up each menstrual period, proved to be a hydro- or, rather, hematocele of the vaginal process of the peritoneum.

Beside the herniotomies performed on hermaphrodites and persons of doubtful sex, I have gathered together *thirty-one cases of laparotomies on such persons*. Five times the abdominal incision was made for diagnostic purposes to examine the sexual glands. In several of these cases only the microscopic examination of the removed gland established a previous mistake in sex. Twice a laparotomy revealed an ovarian tumor in men (cases of Krabbel and Pozzi: "Ovariectomies on Men"). Once in a woman a vaginal operation for hematocele was performed. The woman died after a puncture per vaginam, and the post-mortem showed that the trochar had been stuck through the bladder into a sarcoma of an undescended testicle. *In twenty-eight laparotomies there were discovered fifteen errors of sex*. Fehling diagnosed hematometra in a girl who had had her periods but two years. The girl had a narrow vagina with hymen, a clitoris five centimeters long, in the right labial fold a hard body connected by a cord with the inguinal canal. As a puncture did not elicit any retained blood, he held the idea that the case was one of a tumor of the left ovary with labial ectopy of the right. He thereupon made a laparotomy which substantiated the second diagnosis; a myxomatous left-sided ovarian tumor was removed, and the right ectopic ovary, together with the tube, drawn from the inguinal canal into the abdominal cavity.

Interesting and instructive is particularly the case recently reported by Paton, of pseudo-hermaphroditismus masculinus internus with removal of a pyosalpinx by laparotomy in a young man of twenty-one years who suffered from dysuria and pyuria. How great was his astonishment when he discovered, on operating, the presence of a well-developed uterus and tubes, both of the latter being transformed into pus-sacks. On the right side an incision had been made the year previous parallel to Poupert's ligament, to empty a deep-seated abscess. A post-operative fistula had healed up only half a year ago. The left-sided pyosalpinx discovered in this laparotomy was removed. The uterus was left, as was also the right tube, which seemed adherent to the abdominal wall. The uterus emptied into a vagina with peno-scrotal hypospadias. Oddly enough, the urethra likewise emptied into this



vagina, and by such a small opening that the bladder was with difficulty emptied. One had never succeeded in getting a catheter into the bladder. This was afterwards easily comprehensible. Previous to the operation one had mistaken the vaginal opening for the urinary meatus.

Two weeks ago a diagnostic laparotomy was performed by me in the case of a twenty-five-year-old servant girl who had aroused suspicion of being a male hermaphrodite, for the purpose of finding out the nature of the sexual glands palpated per rectum. They proved to be ovaries. Thereupon, according to the girl's wish, the clitoris (which was about the length of the little finger and thickness of the index finger) was amputated. Later on I intend to sever the adhesions of labial folds, so as to lay bare the entrance to the vagina, the presence of which a sound had verified. It is a case exactly paralleling that of v. Mars, who in like manner laid bare the vaginal opening of a female hermaphrodite married as wife, who had come to him on account of the impossibility of coitus.

These few examples must serve to call the surgeon's attention to the many difficult, complicated and surprising cases that his knife may encounter among hermaphrodites. In this narrow space I cannot detail any more of the numerous instructive single cases.

We must further record the instances where a mother comes to the physician with her daughter to ascertain whether her daughter can marry, whether she can hope to have children, or why the girl has not yet menstruated. The last-named question in particular has not rarely led to the discovery of an "erreur de sexe" and the gynecologist and practitioner must direct his special attention to these cases. It is wrong here in order to save the modesty of the girl, to say merely: probably anemia. If then you give the girl iron, baths, emmenagogues of various kinds, if you get her to take gymnastics, to swim, to ride a wheel, play tennis or basket-ball, etc., you would make a mistake. If you do not wish to risk some serious error or put at stake your good name as diagnostician, as doctor and helper of the sick, you must make an examination in such a case. The caution: "Cavete hymeni" is here out of place. One can readily make such an examination without disturbing feminine modesty or of injuring the hymen. In the case of Steglehner the mother demanded a post-mortem on her girl, who had died of consumption, to find out why her daughter had never menstruated. The presence of testicles and male hypospadias was discovered. The mother must have intuitively doubted the feminine sex of the girl.

Beside the unmarried girls the physician is further frequently consulted by wives on account of sterility, dyspareunia or impossibility of intercourse. Here one usually finds an adhesion of the labia, with well-developed vagina and uterus, and let us say a hypertrophied clitoris, and here Hugnier, Sonnenburg and v. Mars advise discision of the vulvar atresia. At other times we find hypospadias with one or double-

sided cryptorchism of a male hermaphrodite and we must watch for ejaculations of sperma and palpate testicles and epididymis. The examination per rectum or where possible per vaginam will give evidence whether a uterus or a prostate is present or both or neither of them. Under circumstances we can here mistake the sex, where, for instance, a vagina at the outset rudimentary has by continued intercourse become long and wide enough to admit a regular speculum, as in Polaillon's case. He could introduce a cylindrical speculum all the way into a canal underneath the urinary meatus, not the vagina, but an artificial invagination of the skin between urethra and rectum. Post-mortem showed that the body of this prostitute was that of a man and not that of a woman, as Polaillon had supposed. Where one can feel testicle and epididymis in the labial folds with narrow vagina, where a cremasteric reflex is distinct and one can feel the seminal cords roll under one's fingers, where further a viscid ejaculation is obtained containing spermatozoa, there all doubt is removed. Often such an ejaculation can be observed only after frequent examinations. Occasionally it is possible to see in the lateral edge of the urethra or vagina the openings of the ejaculatory ducts, particularly if examined at the moment of ejaculation. These matters are, however, exceedingly difficult of investigation and I personally succeeded in establishing this point only once among thirty-eight cases of hermaphrodites.

*Is it always proper if one has established a mistake of sex in a married person to tell such an individual or his or her spouse the results of the examination?* How should one act in private practice where the mistake is discovered accidentally? Should one at once disclose the matter to the young girl, her parents, etc.? These questions have never been discussed by the profession. In several cases, the physician discovering the male sex of the wife, told neither her nor her husband about the matter so as not to disturb the previous marital bliss of the couple. Where a divorce is asked for because of dyspareunia, sterility, etc., the doctor need not hesitate to impart his findings.

*Can a girl having testicles, hence a male hermaphrodite, after establishing the error of sex be legally compelled to put on male attire?* As a matter of fact in the case of Marie Karfiol, the police compelled her against her will to put on male attire. As a rule, however, in the case of a hermaphrodite raised as a girl the authorities allow him to continue in his mode of life, unless he himself desires to change it. In the case of the midwife Maerker, the authorities established the fact that she was a male hypospadias, took away her right to practice midwifery, but allowed her still to dress like a woman. These are all still open questions, however, which have not been settled in the courts.

As regards the diagnostic value of the erection of the male organ it must be said that cases are well-known where even very decided erections of a hypertrophic clitoris have been observed in female hermaph-



rodites, who, married as men, have had intercourse to the satisfaction of their wives with an immission of the organ. In how far this immission was complete is another question; occasionally it might require an unusual attitude in intercourse. If larger corpora cavernosa are present, the erection of a hypertrophic clitoris may occur. Hence this possesses no diagnostic value, even if at times, as in my last case of female pseudo-hermaphroditism, a clitoris the size of a finger is found which had never been in erection, although the girl was twenty-five years old. In view of the fact that physicians are so liable *a priori* to consider male pseudo-hermaphroditism as probable where there is a large clitoris, I again call to mind the case of Karl Menniken, and also that of Gunckel. The latter was a girl with male sexual desires, who was arrested on a charge of incest. In the courts she was declared a man, but received permission to continue to dress in female attire. She died at fifty years. The post-mortem showed a myomatous uterus, ovaries, a vagina ending in the caput gallinagis, a clitoris hypertrophied like a penis and penetrated by the urethra up to a point about two and a half cm. behind the tip of the glans.

Of equal importance is a post-mortem done by Prof. Grawitz that has not yet been published: still-born boy with normal penis; in the abdomen two ovaries lying in normal position, two round ligaments, two rudimentary uteri each with a tube and two vaginæ, the one ending blind, the other patent, ending close together in the bladder, and between them the rectum opened into the bladder. Here, therefore; there was in the exterior of the body absolutely nothing favoring the probability of female sex. Apparently, it was simply a boy with undescended testicles. It would be desirable for the reader to remember these striking cases in particular.

As to the so-called secondary sexual characters, these can only give corroborative evidence of meager value in making a diagnosis as to sex, never can they positively decide the question. Neither the voice nor the size and shape of the throat, nor the method of ossification of the various parts of the thyroid cartilage, usually so typical in man and in woman, can be considered as decisive; nor likewise the form and size of the pelvis, the distribution of hair-growth, the hair on the face, the upper lip, the cheeks, the chin, neck, chest extremities, the pubic and perineal region, the flanks and the lower abdomen. In women the pubic growth of hair ends in a horizontal line above the symphysis. In men a corner extends vertically up to the umbilicus. This sign also has absolutely no value, just as the development of the muscular system, the fatty panniculus, or the breasts. While for instance "gynecomastie" occurs in normal men, it is found even more frequently and with palpable glandular tissue in male hermaphrodites. The thoracic and abdominal type of respiration is also not a positive sign.

In 1900 I collected nineteen cases where either *benignant* or *malignant*

tumors, particularly of the sexual organs, were associated with pseudo-hermaphroditism. At the present time I can increase this number to thirty-three cases. The surgeon should know of this coincidence. Even if I am far from asserting any causal relation between the congenital deformity and the neoplasm, particularly the benignant kind, I would, being no upholder of the bacterial or parasitic theories concerning carcinoma, call special attention to this coincidence. Especially is to be noted the frequency of sarcomatous degeneration of undescended testicles in which the disturbed nutritive conditions are possibly a factor as well as occasional mechanical insults, such as, for instance, the pressure exerted continuously upon the testicle in the inguinal canal. The *predisposition of undescended testicles for sarcoma* is so generally recognized that only recently Kroenig removed the testicles of a male hermaphrodite raised as a girl solely because cryptorchismus might lead to sarcoma formation.

While it is readily comprehensible that in deformed newborn children the sex is easily mistaken and that nature does not always sooner or later clear up the error by means of the onset of menses, the descent of one or both testicles, occurrence of pollutions, ejaculations, etc., yet other mistakes are harder to explain, as thus a case in the middle ages, where a woman with a penis-like prolapse of the uterus and total inversion of the vagina, was declared a hermaphrodite and so considered until Saviard disclosed the true state of affairs. I have even heard of a case where parents without any malformation of their son, clothed him as a girl so that he would not have to serve in the army. Cases have also occurred, however, where female hermaphrodites raised and baptized as men were discharged from military service, once on the appearance of menstruation, the other case because the soldier became pregnant and was delivered similar to that famous monk of the middle ages, *Mas, Mulier, Monachus, Mundi mirabile monstrum*, who gave birth to a child in a monastery and was punished by penance and expulsion from the monastery. In another case a boy in the service of the monastery was accused before the assembly of monks of the theft of a sacred vessel and a whipping was ordered. The boy begged that they would not undress him for this punishment as he was ashamed since he had noticed that he was a girl and was menstruating. After assuring themselves of these statements they not only excused him from punishment but gave him female attire and a dowry. The former choir-boy married a merchant and children issued from the marriage.

Finally, I must mention a group of cases in which the work of the surgeon is associated with pseudo-hermaphroditism. *In many cases the mother asks him to remove the hypertrophic clitoris*, and he without further ado removes it without for a minute suspecting that he might be robbing a male hermaphrodite of his male organ. Landau describes such a case in which Berendes had cut off the clitoris of a young girl, and where he



himself later established the sex as male. In most cases the physician more carefully declines to operate.

Occasionally a male hypospadias has asked for the amputation of his penis as the erection of the hook-like, downward-curving organ was painful. At times such a hypospadias wishes the tissues cut that bind down his penis, hoping thereby more easily to effect an emission. Not much, however, is usually accomplished by such an incision, since scar-tissue is again formed and this scar contracts. Still this operation being a small one is justifiable. In conclusion, the constantly increasing number of cases must be recorded in which the surgeon has after repeated painstaking plastic operations succeeded in fully curing a peno-scrotal hypospadias.

Regarding mistaken diagnoses of sex, cases are known *where at different ages the sex of the hermaphrodite was differently determined*, and the manner of life and social position changed several times. Anne Grandgean, for instance, was raised as a girl up to her fourteenth year; later, on the advice of a priest, as a boy and called Jean. Jean married; the union was childless. Then another priest told his wife that she should no longer consider Jean a man—the marriage was annulled. Jean and his wife were condemned for profanation of the sacrament. Finally Jean was pardoned, but compelled thereafter to wear feminine attire. In the well-known case described by Otto, the third husband of a woman, the peasant Kabuza, asked for a divorce. In the first trial the sex of a woman—a male hermaphrodite—was adjudged feminine and the man blamed for the impossibility of coitus on account of his phimosis, but a later trial established the male sex of his wife. Even the same doctor has changed his opinion in regard to the sex of a certain individual. Thus Martin regarded two sexual glands removed by him in a double-sided herniotomy on a married woman as apparently ectopic ovaries, since he thought he could detect with the naked eye follicles. The microscope showed however that they were testicles. The exceedingly numerous collection of cases in which a mistake of diagnosis has been made requires the greatest reserve and caution in determining the sex of any given case. *Several French and Italian authorities have asked in such cases of doubtful sex for the introduction of the term: SEXE INDETERMINE (sex undetermined).* Later in life, when one or the other sex has become manifest, the necessary changes in the manner of life should be made. No such clause has as yet, however, been introduced in books of law. Its introduction would put the parents in an embarrassing position. How should they clothe and educate their child? In practice the clause is perhaps superfluous. It might, however, gain some importance in a forensic way if the individual in question should at some later time come into collision with the law.

Of great interest likewise is the study of the psychic condition of hermaphrodites. Unfortunately, so little attention has thus far been

paid to this side in reports of cases that only a few scattered ones offer available material. It is a work of the future to study the so-called psychical hermaphrodisia with apparently normally formed genitalia, the homosexual desire, etc. Dr. Hirschfeld is at present engaged in studying these problems in his *Jahrbuch fuer sexuelle Zwischenstufen*.

In conclusion, I would like to ask such of my fellow-colleagues who may have occasion to observe cases of pseudo-hermaphroditism, kindly to send as full an account of them as possible to me at the following address: Leszno 33, Warsaw, Russia.

---

### THE OPERATIVE TREATMENT OF RIGID FLAT FOOT—REPORT OF A CASE, REMOVAL OF THE SCAPHOID.

BY NATHANIEL ALLISON, M. D., of St. Louis.

The history of the case I wish to report is as follows: A girl of sixteen years has been troubled with her feet for over two years; her occupation has made it necessary for her to stand for long stretches of time on her feet; when she first had symptoms, she considered her trouble rheumatism and took medicine accordingly; her trouble grew worse all the time. She then went to an instrument maker, who sold her a pair of ready-made plates; these supports she wore, but her pain did not leave; in fact, it grew worse. Her right foot now became much worse than her left, so bad indeed that she could no longer bear any weight on it; she then consulted a surgeon, who did a supramalleolar osteotomy of the tibia and fibula (Trendelenburg's operation) on the right leg. Eleven weeks after this operation I saw the case for the first time; the right foot had relapsed into a position of marked valgus; the patient was unable to walk without crutches, she was discouraged and held the opinion that nothing short of an artificial foot would relieve her pain and make it possible for her to walk.

Figure number 1 is a photograph of a cast taken of the right foot at that time. The foot was extremely rigid, the outer border held off the ground, any attempt at motion caused pain severe in character, the usefulness of the foot was entirely gone. Firm union had followed the osteotomy done on the tibia and fibula, and the patient possessed a well-marked bow leg.

I suggested manipulation under an anesthetic, and if found necessary, further operation in order to restore the foot to a weight bearing and walking position.

On May the 18th, 1903, the patient was anesthetized, and it was found necessary to operate in order to accomplish a satisfactory correction. Through a curved incision two inches long made over the scaphoid bone I removed that bone entire. It was then possible to correct the foot;



furthermore, it took but slight force to hold it in a corrected position. Plaster of Paris was applied, and it was thus held for a period of three weeks. The plaster bandage was then removed.

Figure 2 is a photograph of a cast taken of the foot at that time. It shows a foot practically normal as to conformity.

A steel plate designed to hold the foot corrected was then put under the foot, and the inner edge of her shoe was raised in order to obtain a slight amount of overcorrection. Crutches were used for three weeks more and then put aside.

As might well be expected, considerable difficulty was experienced



FIG. 1.

when the foot was put back into use; it had been weakened by a long period of disuse and further by operation; in consequence it began to react painfully. By the constant use of massage, intelligent manipulation and active exercises designed to strengthen the foot, the patient is now able to walk encumbered only by a steel plate inside her shoe.

In considering this case one might well ask several questions:

In the first place, when the flat foot was incipient or even after it had become definitely flat, was the girl properly treated?

She was supplied with a store plate which had the effect of raising a callosity on the inner side of her foot but was otherwise inefficient; this is evidenced by the fact that she gained no relief, and standing it to the

limit of endurance she sought to have something radical done. I am of the opinion that had she been instructed in proper exercises to make her foot strong, had she been supplied with a rational support, intended to accomplish something in the way of correction, be it either plate or modified shoe, her foot would not have collapsed. Even after the foot had collapsed, if it had been manipulated and retained in a cast for a short while, this treatment followed by massage, suitable exercise and support, I think the painful symptoms could have been relieved and a perfectly useful foot maintained. But instead, she went on as long as human endurance lasts, but must finally give up and have an operation.

The second question: Given a case of so-called fourth degree flat foot, that is a case where manipulation under anesthetic has failed and bone operation alone seems indicated, what operation promises the best result?

In my case here we have an exposition of the results of two of them. *Supramalleolar osteotomy of the tibia and fibula* or Trendelenburg's operation was done first, so taking it in that order what does it promise?

Trendelenburg's idea was that by dividing the bones of the leg above the ankle and turning the distal fragment in, creating a bow leg in fact, the body weight would be directed upon the outer border of the foot. He arrived at this conclusion after he had seen several cases of badly set Pott's fracture (where the foot was thrown into a valgus position due to the deformity at the ankle joint) treated successfully by this osteotomy. Whitman speaks of this procedure as being an innocent and rational operation, but he qualifies this statement by saying further that it is by no means always successful; also that he regards the bow leg as unfortunate accompaniment of the treatment in case it were successful. I am convinced that it is hardly a rational, surely not an innocent operation. In the deformity following Pott's fracture the change is in the ankle joint itself and the faulty position of the foot is a result of this change; here this form of osteotomy is indicated, as it corrects the deformity which is causing the trouble. In rigid flat foot the change is in the sub-astragaloid joint; this form of osteotomy done here compounds the deformity and furthermore necessarily implies that the foot itself can be reduced in order to accomplish anything in the way of a cure. If it is possible to reduce the foot and hold it reduced in plaster of Paris, I cannot agree that it is rational or innocent to deform the leg. Messrs. Walsham and Hughes state relative to this operation: "It is difficult to understand how a transverse severance of the tibia and fibula above the ankle joint could well affect the rigidity of the foot at the sub-astragaloid joint." In the case which I report, this operation was done and well done, but as far as any good result is concerned it was quite unproductive; the fact is that the patient was more or less completely disabled for a period of eleven weeks and found at the end of that time that it would be necessary to undergo further operative treatment in order to walk, and that she was the possessor of a bowed leg. As far as the mechanics go, suffice it to



say that in this case the bad position of the leg seemed to exaggerate the bad position of the foot. It is my opinion, therefore, that the operation used as a radical method for the cure of rigid valgus holds out little promise of success, and, furthermore, it is liable to produce severe adverse criticism.

There are several operations described in the literature that have the object in view of correcting the foot itself; the prime idea in most of them is the removal of a more or less extensive wedge from the inner side of the tarsus, thus removing the obstacle to correction. First—

*Ogsten's Operation*, or the Ablation of Chopart's Joint.—The procedure



FIG. 2.

here is to denude the cartilaginous surfaces of the astragalo-scaphoid joint, correct the foot, peg the bones together, and immobilize the foot in plaster of Paris. This operation has been rarely done. Walsham and Hughes state that only once did they try it and then the result was not satisfactory. The objection to this operation is that it purposes to immobilize a useful articulation, that the period of non-use to obtain this immobilization is too long.

Mr. Hare's operation is only a modification of Ogsten's. He cut the astragalus and scaphoid in such a manner that they dovetailed together. It is open to the same objections that obtain against the Ogsten operation.

Sir William Stokes describes removing a wedge from the head and neck of the astragalus; but he found that this was not sufficient in most cases to allow the arch to be restored.

*Larabrie* reports a case so extreme in character that the dorsum of the foot was concave and the sole convex; here he gained a useful foot by removing the scaphoid entire, a portion of the cuboid and internal cuneiform, and the head of the astragalus; he took out a good sized wedge in fact, involving most of the tarsal bones; he wired what was left of the bones together. This, there is no need to state, is an extreme measure.

*Gleich* devised a very ingenious operation, the idea being to raise the posterior pillar of the arch. He cut across the os calcis in a diagonal direction and simply slid the heel forward. I do not know to what result this operation would lead. Stokes says that it would lead to the same trouble that follows wearing high-heeled boots.

*Removal of the scaphoid* was probably first done by Mr. Richard Davy and Mr. Golding Bird; they report several cases each where it restored the foot and relieved the pain.

It seems to me to be the best operation where operation is necessary. The wedge is removed from the inner side and it is sufficient to allow good correction in most cases, and this wedge is not removed with the end in view of fixing any joint. There is no doubt that it weakens the foot; any of these operations will do that; the question is one of degree.

In my case it produced a good result as far as the conformity of the foot was concerned, but I had in addition a very weak foot to treat, a foot that would readily return to a position of deformity, a painfully weak foot. I put under this patient's foot a plate designed to hold the foot corrected, a plate with several flanges, so that her foot could not slip away. Active and passive exercise were faithfully carried out, the amount being increased as the foot gained strength; in addition to this, she had massage and cold and hot water bathing; several times she lost heart and needed encouragement, but I am glad to say her foot has gained enough strength to be perfectly useful.

The fact that any operation on the tarsal bones has a tendency to weaken the foot is evident, the foot already weak is made weaker. That it is necessary at times to do an operation here I am sure is a fact, but the operation should always follow the failure of a manual reduction under an anesthetic. In the choice of operations I believe the simplest to be the best; that exsection of the scaphoid is the simplest is easily demonstrated, there is no pegging or wiring in order to hold the corrected position, nor is there destruction of an articulation. I cannot approve of the operation known as Trendelenburg's operation as a means for radically curing rigid flat foot.

The after-treatment of the operative cases is of the greatest importance; it means that one has a very weak foot that has a strong tendency to become flat. I wish to bring out strongly the point that a case is not cured when the operative wound has healed and the retention plaster is removed; on the contrary, the treatment is just begun.



PNEUMOCOCCIC INFECTION OF THE RESPIRATORY TRACT—A  
CONTRIBUTION TO THE ETIOLOGY OF "COLDS." \*

BY JOHN ZAHORSKY, M. D., of St. Louis, Mo.

Four years ago I read a paper before this society entitled "Cold as an Etiological Factor in Diseases of the Upper Air Passages" (*St. Louis Courier of Medicine*, 1900), in which I argued that cold is an incidental predisposing cause of these diseases, and that the principal causation lay in an infectious and contagious agent. From a study of the literature, one is impressed with the growing sentiment that "colds" belong to the category of infectious diseases, and must be treated as such clinically. Since that time I have given these diseases much study, inasmuch as more than half of my clinical work is their diagnosis and treatment.

In infants and children especially do these diseases reveal themselves in their characteristic nature. I am more than ever convinced that the principal factor is a contagious one, which does the work in most cases without the predisposition induced by exposure. It is the rule that some member of the family takes "cold"—that is, receives the infection from outside of the family—and it is thus introduced into the home. Its spread there depends on a predisposition of each individual and the virulence of the micro-organisms. Other factors are ventilation, general nutrition, fatigue, exposure, etc.

For some time I have been studying the nasal, pharyngeal, and bronchial secretion from these "colds," with the object of finding certain definite bacteriologic pictures connected with clinical types. It has become a general custom to call all severe respiratory infections "grip," without really having any of the typical symptoms present. The term is convenient, and if the clinician retains the fact in mind that these diseases are caused by a variety of micro-organisms, there can be no harm in retaining the name of "grip." At any rate, it does not foster a wrong etiologic conception, as the term "cold" does.

We had a wide epidemic of these "colds" in St. Louis during the months of October, November and December. Isolated cases may be traced back to the summer months, but with the opening of school, and with the advent of cold weather, necessitating an indoor life, the number of cases became enormously increased.

Its contagious nature was very readily obvious. Whole families were coughing and sneezing. In the schools, I was told, a general coughing epidemic was observed. The disease varied in severity in different individuals. The severe nervous symptoms of influenza were usually absent. Most commonly the part involved was the nose and naso-pharynx, which, in spreading downward, caused a laryngitis, bronchitis and

\* Read before the Medical Science Club, January 10, 1903.

broncho-pneumonia in some cases. Many times the primary disease occurred in the larynx, occasionally in the trachea or bronchial tubes.

A very suggestive fact was the enormous increase in croupous pneumonia throughout the city. In my own practice I have seen several cases of typical croupous pneumonia in families where this respiratory infection occurred. A very common localization was in the Eustachian tube and middle ear, giving rise to deafness, pain, fever and suppuration, according to the intensity of the inflammatory process. In some cases a marked conjunctivitis was observed. Two cases in adults developed abscesses in some of the accessory cavities of the nose. The tonsils were not infrequently involved, lacunar exudates being the rule where this organ was the seat of the infection.

The general symptoms were usually mild in adults, but in infants and children the occurrence of high fever was not uncommon in post-nasal, otitic, tonsillar or bronchial infection. No general rule can be laid down as to the course of the fever. In some cases an initial rise for a few hours was the extent of the fever. In other cases repeated daily elevations were observed. In still others a continuous fever, lasting from three to fourteen days without any serious local lesion, suggested a septicemia. Of course, in broncho-pneumonia and lobar pneumonia the usual fever curve was observed. Another marked symptom was an obstinate cough in some of the tracheal infections. Recrudescences and relapses were very common both in general and in local symptoms. The stomach seemed to be involved in some cases, since I saw several cases of severe vomiting associated with other signs of the typical respiratory infection.

Altogether, I made twenty-six examinations, and Mr. Snodgrass made twelve examinations of the secretions from the nose, throat and bronchial tubes. The sputum was usually stained with dilute carbolfuchsin, or some modification of Gram's stain, usually the so-called Weigert-Escherich stain. The morphology of the bacteria is well shown, although it must be admitted that bacteriologic appearances are very deceptive. And yet when once the presence of a certain micro-organism is corroborated by differential stain and culture, one becomes very confident that a certain micro-organism is the one designated originally.

In this series of examinations with six exceptions the diplococcus lancolatus (Fraenkel) was invariably found present in considerable numbers. A small bacillus, presumably the influenza bacillus, was present only once. In several cases a diplococcus having the morphology and the characteristics of the micrococcus catarrhalis was encountered. Again, in a few cases a diplococcus which did not decolorize according to Gram, but which otherwise resembled the micrococcus catarrhalis seemed to be the prevailing micro-organism present.

From this study I do not hesitate to state that we have recently had a wide-spread epidemic of pneumococcic infection.



As is to be expected, the prevalence and mortality of lobar pneumonia has been greatly increased. A study of the city mortuary statistics for the past few weeks shows that pneumonia has been wide-spread, about thirty or more deaths occurring each week. Then it is a common report among physicians as to the frequency of the disease. Personally I have treated four cases of typical lobar pneumonia in the last four weeks—three in children and one in a young adult. In addition, several cases of broncho-pneumonia belong to this series.

The important general conclusion from this, which does not seem to be generally appreciated, is that *lobar pneumonia is only an incident, or possibly an accident, of a wide-spread pneumococcus infection*. Hence, in the prophylaxis of this disease it is necessary to consider the cases of bronchitis and angina which are the sources of the common infections.

Let me briefly rehearse a few family histories in this epidemic.

1. A girl seven years of age had croupous pneumonia of both lower lobes and was severely ill for ten days. A little sister, younger, had a tracheitis with bad cough. A little brother had coryza and angina.

2. A boy, aged seven years, had lobar pneumonia of one lung. The father had an angina of moderate severity. The mother had angina, tracheitis and intercostal neuralgia. A little sister had coryza and angina.

3. The father had angina which was followed by coryza and bronchitis in the son five years of age; and the baby sister had severe broncho-pneumonia.

4. The father had coryza and follicular tonsillitis, the mother had angina and post-nasal inflammation, one child had intense conjunctivitis and coryza and the other suffered from a cough, coryza and conjunctivitis.

This series could be very much extended and shows the diverse lesions which may result in the same family from the same infective agent. The rule, however, is that the lesions are very similar in the different members of the family. The inflammation begins at one point and spreads up and down the respiratory tract.

That family epidemics may be due to the pneumococcus has been reported by others. Several years ago an epidemic in a foundling home of Germany was extensively described. Family epidemics have been reported by Baduel and others. Some of the earlier writers (Pansini, Hoffman and Durck) assert that the bronchi always contain bacteria, but later writers (Babes, Neisser, Thomson, Miller, etc.) found the bronchi and lungs of animals recently killed, sterile; hence it is the general accepted belief that the bronchi and lungs in health contain very few bacteria.

Those which enter are destroyed by the bronchial secretions or enter the lymphatic spaces and are destroyed in the bronchial lymphatic nodes.

In bronchitis and pneumonia bacteria are invariably present. In the study of bronchitis Barthel (*Centralb. f. Bact. u. Paras.*, 1898) found the pneumococcus most commonly present and regarded this micro-organism as the most important cause of the disease. Ritchie (*Jour. of Path. and Bact.*, 1900), after examining twenty-seven cases of acute bronchitis in children, found the pneumococcus and the streptococcus the most common bacteria present.

Rey (*Jahrb. f. Kinderheil.*, 1902) calls attention to an epidemic of otitis media due to the pneumococcus.

These are only a few of the large number of references concerning pneumococcus infection in the literature. Much attention is given the pneumococcic septicemia, many cases of which are met clinically, the exact diagnosis of which depends on a blood culture. Other parts of the body, as the joints, peritoneum, meninges, etc., may be infected.

Four years ago we had a severe epidemic of respiratory disease at the Bethesda Foundling Home. About sixty babies suffered from angina and bronchitis. There were several cases of broncho-pneumonia, and what was very suggestive was that seven cases of typical lobar pneumonia occurred among the babies. While no bacteriologic study was made at the time, I believe now that it was an epidemic of pneumococcic infection.

During this season I have seen two very severe cases of follicular tonsillitis which were diagnosticated as diphtheria by physicians, both of which were caused by a diplococcus which very much resembled the pneumococcus. We have, then, other bacteria than the influenza bacillus which can produce a wide-spread respiratory disease, and for this we are in reality in need of a name. It is misleading to call them "colds," and to designate them by their anatomical position, such as bronchitis, pharyngitis, does not express the true condition, since the seat of the morbid process changes. This is certainly confusing at least to our patients who cannot see the relation of grip and bronchitis. In a family we can have cases of croup, bronchitis and adenoiditis, all depending on the same bacterial cause, and should be designated by some name which shall express their common origin. Until these different infections shall be more definitely grouped clinically, we must be content to call them all acute respiratory infections, or rhino-bronchial infections; or when the cause is known, as in the epidemic studied, we may say respiratory pneumococcosis. To our patients we speak of "grip." In conclusion, I desire to urge the frequent microscopic examination of the sputum and nasal secretion, for it seems in many cases an adequate idea of the bacteria present may be thus obtained.

1460 S. Grand.



## EDITORIAL COMMENT.

---

### A NEGLECTED INQUIRY IN THE CAUSATION OF PNEUMONIA.

It is rather singular that so little attention has been given to the morbid conditions which are associated in the members of families and institutions where one or more cases of lobar pneumonia have originated. This is the more surprising since the wide prevalence of pneumonia at certain seasons of the year is a well-established fact, and the suspicion that the diplococcus pneumonia must find special favoring conditions for its propagation and growth is very readily verified. And yet the actual transference of the germ from one case of pneumonia to another seems probable in exceptional cases only; the family epidemics of pneumonia are by no means infrequent, but the rule in private practice is that only one case occurs in a family.

What is more rational to assume, then, that some other morbid condition other than pneumonia is caused by and serves as the means of transference of the diplococcus pneumonia?

The researches of a few modern investigators, as pointed out by Zahorsky in this number, tend to prove that bronchitis, tracheitis and rhinitis—very common affections—are produced in many epidemics by the same micro-organism which causes pneumonia; and it is these mild affections, which ordinarily pass under the erroneous name of “colds,” that serve in the transference of the germ.

The neglected inquiry to which we refer is the failure to observe the presence of “colds” in other members of the family. In recording the history of the onset and development of a case of pneumonia, the other cases of respiratory disease prevalent in members of the family and in the community should be carefully collected and recorded. Whenever possible, bacteriologic examinations of these cases should be made and the organism present compared with those found in the pneumonic infections.

The practical value of this inquiry is obvious when considered from the standpoint of prophylaxis. The disease—the greatest scourge of modern times—can only be controlled when efforts directed to the eradication of pneumococcic bronchitis and rhinitis are effective; and the task seems impossible at present.

The fact that the pneumococcus is found in the saliva of many healthy persons probably does not serve as a means to propagate the disease. More dangerous are the pneumococcus bronchitis when the act of coughing throws the germs into the air and are then inspired by others. The development of pneumonia depends on the number of pneumococci that reach the alveoli and the bacteriolytic power of the bronchial secretion.

A large number of the first or a deficiency of the second permits the victory of the bacteria.

#### PSEUDO-HERMAPHRODITISM.

In an article on the "Value of a Knowledge of Pseudo-hermaphroditism for the Practitioner," which appears in this number, Dr. Franz Neugebauer, of Warsaw, points out the frequency with which surgeons make mistaken diagnoses of sex in these cases. Many a supposed girl has been operated on for a hernia that in reality proved to be merely the delayed descent of the testicle. Similarly other operative mistakes have been made. The author, therefore, warns against any radical measures before sex has been determined.

The necessity of such a warning is well illustrated by Dr. Goffe's case, published in the December number of the *American Journal of Obstetrics*. The patient had been raised as a girl, and according to the surgeon the "female characteristics predominated." If one is to judge by the description and illustrations of the case, it is hard to see how Dr. Goffe arrives at this opinion. The possibility, nay, even the probability of a male hypospadias with undescended testicles seems the more rational conclusion. At any rate, the sex was uncertain, as Dr. Goffe himself admitted. The patient had an organ resembling a penis and beneath it an opening like that of an atrophic vagina. She was asked whether she wished to be made like a man or a woman. To this she answered "a woman" and the surgeon thereupon amputated the penis and enlarged the vaginal opening.

While we will not deny the possibility that the individual in this case may have *guessed* her true sex, the principle of allowing our patients to decide such questions is bound to lead to serious consequences. A case in point is that of Berendes-Landau, quoted by Neugebauer, where several years after a plastic operation similar to Goffe's, the patient was found to be a man. Hence Neugebauer argues justly the advisability of a diagnostic laparotomy. Five such operations have already been made. The procedure under modern asepsis is practically harmless and since the future happiness of the individual may depend greatly upon it, is certainly justifiable.

In a new series of six cases just published (*Centralblatt fuer Gynaekologie*, January 16, 1904), Neugebauer shows how in three of them only a laparotomy served to settle finally the true sex of the individual. On principle, therefore, we must shun all such plastic operations as Dr. Goffe performed until every means of ascertaining the true sex of the individual has been exhausted.



## TUBEROUS IODIDE OF POTASH ERUPTION SIMULATING HISTOLOGICALLY AN EPITHELIOMA.

Dr. D. W. Montgomery, of San Francisco, publishes in the February number of the *Journal of Cutaneous Diseases* an interesting case of iododerma. The point of interest lies in the fact that although the patient had numerous tuberosus lesions caused by the administration of iodide of potash, yet the histologic picture was that of an epithelioma. "Many of the fields under the microscope looked exactly like epitheliomatous infiltration. There was the same appearance of connective tissue *laculi*, solidly filled with atypical epithelial cells. It is true that the whole process took place above the level of the skin, but this is a clinical not a pathological observation, and one receiving such a piece of tissue in the laboratory for examination, without a most carefully worded history and without seeing the patient, might easily fall into the error of supposing the affection to be an epithelioma."

If only one lesion should occur in such a case with the histologic picture of this character, a diagnosis of epithelioma would be a natural sequence and error. The possibility of such an error Dr. Montgomery has never seen mentioned in the diagnosis of epithelioma. This acanthotic action of iodine has been noticed by Ehrmann and also by Norman Walker.

The study of drug eruptions, both histologically and chemically, is a fruitful field of research. Iodine and bromine cause many polymorphic conditions in the skin, often simulating various diseases, especially syphilis. It is at times exceedingly difficult to differentiate between certain syphilides and forms of tuberosus or pustular eruptions caused by either iodine or bromine. The resultant scar or previous scars from a similar process are also the cause of much misleading confusion, as they exactly simulate those of a syphilitic nature. Then, again, we may have, in a local syphilitic disturbance in the skin, the substitution of the toxic pathologic effect of iodine when it is being administered for the cure of the former process. The lesion, therefore, increases in its dimensions, becomes larger and more aggressive, apparently indicating the necessity of increasing the dose of the iodine, whereas the cessation of the iodine altogether is indicated; when this is done, resolution rapidly ensues. This confusing fact in the administration of iodine was referred to by the writer in the *Medical Review*, August 17, 1901, in an article entitled "Some Complications of Syphilis of the Skin and Their Treatment." Montgomery, in this report, confirms this observation, attributing the toxic action to kidney insufficiency. Upon the skin the toxic action of drugs is directed to points of previously existing irritation or inflammation, which law also applies to the local action of microbic toxins, as can be illustrated in syphilis, variola and other diseases. In these diseases the eruption often sharply outlines the points of former irritation, such as that produced by a truss, garter or suspender, and when, from any cause, the toxic action of any drug is brought about, its greatest effect is observed on the former pathologic tissue. This fact gives a clue to the pathology of iodine and bromine acne of the usual type, also to the therapeutic action of iodine upon the skin.

# MEDICAL AND SURGICAL PROGRESS.

## INTERNAL MEDICINE.

IN CHARGE OF

JESSE S. MYER, M. D.

**The Serum Treatment of Typhoid Fever.**—EINHORN (*Medical Record*, January 16, 1904) reviews the work done thus far with the anti-typhoid serum, and reports the results of its application in a number of cases under his own observation. Though his material is too small to enable him to come to far-reaching conclusions, he corroborates in part at least the results claimed by Jez, viz.: (1) The anti-typhoid extract is of specific therapeutic value against typhoid fever only; (2) it is a harmless preparation which can be given in large doses without any untoward effects; (3) it is an aid in differential diagnosis; (4) if given uninterruptedly in typhoid fever, it decreases the temperature and strengthens the pulse; (5) it shortens the duration of typhoid fever and diminishes or neutralizes completely the effect of the toxins of typhoid fever; (6) taken per os it naturally cannot cause any such complications as sometimes result from subcutaneous injections.

Einhorn finds that while the use of the serum does not seem to materially shorten the disease, it does improve the general condition. The sensory and nervous symptoms are especially much improved, so that some grave complications, such as sleeplessness, headache, restlessness, delirium, etc., disappear entirely.

The injections do not seem to be connected with any dangers, and only in one or two cases were even slight disturbances noted.

The writer believes, therefore, that the serum treatment of typhoid fever is now already of decided value, but that we shall soon have more potent sera.

**Intermittent Insufficiency of the Kidneys in Arterio-Sclerosis.**—LANDAU (*Berliner Klinische Wochenschrift*, No. 51, 1903) found through a series of cryoscopic examinations of the urine of arterio-sclerotic patients an intermittent insufficiency on the part of the kidneys. Clinically these cases presented only the evidences of arterio-sclerosis, without any signs of changes in the kidneys. The author is in doubt as to whether "intermittent renal insufficiency" may be considered a condition *per se*, or whether it is a forerunner of the contracted kidney, or whether it is a symptom of an existing interstitial nephritis which we cannot discover through ordinary methods.

**Animal Experimentation in Tuberculosis of the Kidneys: Investigations Concerning the Urine of Tubercular Individuals.**—SALUS (*Berliner Klinische Wochenschrift*, No. 50, 1903) points out the difficulties in arriving at a diagnosis of tuberculosis of the kidneys. The presence of smegma ba-



cilli in the urine, the small number of tubercle bacilli present in the urine in any case, and the doubt as to whether their presence alone justifies a diagnosis of renal tuberculosis, include a few of the difficulties which beset the path of the diagnostician. It has been frequently shown recently that tubercle bacilli may find their way into the urine from lesions located in other parts of the body than the urinary tract—for instance, the lungs.

Through careful catheterization the smegma bacilli may be practically excluded, for they exist on the external parts and rarely get deeper than the anterior urethra.

The most exact method of determining the presence of tubercle bacilli is that of animal inoculation. The urine must be collected under the most careful aseptic precautions, likewise centrifugated. The sediment is injected into guinea-pigs subcutaneously, and the pathologic changes resulting are carefully observed.

In doubtful cases, other positive findings permit of no definite conclusions. The author lays special stress upon persistent and frequent examinations.

---

**Tuberculosis and Pregnancy.**—HAHN (*Berliner Klinische Wochenschrift*, No. 52, 1903) after a careful study of pregnancy in tuberculosis, the influence of the one upon the other, concludes that pregnancy should be considered a severe complication of tuberculosis, and that it is more severe the oftener it occurs. He believes that in the effort to stamp out tuberculosis, the prevention of conception in tuberculous women is a most important factor.

After pregnancy, however, has occurred, the patient should be kept under careful observation by the physician. If unpleasant complications arise, artificial abortion should be done in the presence of a second physician, by and with the consent of the patient. The life of the mother should be placed above that of the child.

In the late months of pregnancy the production of artificial abortion has no advantages over normal labor; in fact, is rather a dangerous procedure. Then, too, inasmuch as a tuberculous mother may give birth to a perfectly healthy child, which, when brought up under proper conditions, has every chance for life, it would be wrong to sacrifice a child unless absolutely necessary.

The author suggests that organizations intended to aid those with tuberculosis should give every possible consideration to pregnant women, for pregnancy, even under normal conditions, is a great tax upon the human organism. The author is not in sympathy with those authorities who recommend artificial abortion in the pregnancy of all tuberculous women.

---

**The Resorption of Iodine and the Usefulness of the Penzoldt-Faber Test for Determining the Motility of the Stomach.**—INOUE (*Archiv fuer Verdauungskrankheiten*, Vol. 9, Pt. 6) came to the following results after experimentation, with reference to the absorption of iodine by the stomach:

The iodides are broken up slowly by hydrochloric acid, but are scarcely affected within one hour by the normal amount of hydrochloric

acid (0.2 per cent.) in the gastric juice. Iodine in aqueous solution is absorbed in the stomach of dogs and cats

The injection of Lugol's solution into the stomach does not stimulate the secretion of normal gastric juice.

Dilute alcoholic solutions (0.1 per cent.) are very slightly absorbed by the mucous membrane of the dog's stomach, but produces a severe inflammation of the mucous membrane with transudation.

The injection of concentrated solutions of iodide of potassium into the stomach does not bring about the secretion of gastric juice nor of HCl. When the iodine reaction occurs in the saliva, it was found that the iodides are well on their way through the intestines.

Within five minutes the iodine reaction was found some distance from the stomach in the small intestine, and had not yet appeared in the saliva.

The author believes, therefore, that the presence of iodine in the saliva is due to the absorption in the intestines, and not in the stomach. If such is the case, then the Penzoldt-Faber test may be utilized to test the motility of the stomach.

---

**The Successful Treatment of an Inoperable Sarcoma With the Roentgen Rays.**—CHRYSOPTATHES (*Muenchener Medicinische Wochenschrift*, No. 50, 1903) reports a case of sarcoma involving the anterior abdominal walls and small intestines in a woman thirty-five years of age, cured through the application of the x-rays.

An effort to remove the tumor, which had attained the size of a child's head, was futile. The influence of the Roentgen rays was first seen in the absolute relief from pain. The infiltrated area around the operation scar began to soften, and finally broke open, discharging a large amount of reddish fluid. The opening closed within a few days, and the patient's appearance and general condition improved rapidly. Within six months the tumor had disappeared entirely.

---

**A Case of Primary Carcinoma of the Lung, Diagnosed From the Expectoration.**—DEMAREST (*Medical Record*, January 16, 1904) reports a case of carcinoma of the lung, which for a long time simulated tuberculosis and was so diagnosed. He had been expectorating blood for many months and presented an area of consolidation in the apex of the right lung. He had been advised to go to the Adirondacks, though there had been no elevation of temperature nor tubercle bacilli in the sputum.

Upon consulting the writer, the patient brought a bottle containing clotted blood and a small mass of tissue.

The microscopical examination of this mass showed it to be carcinoma. The patient died four months later.



## SURGERY.

IN CHARGE OF

WILLARD BARTLETT, M. D.

**A Further Consideration of the Necessity of Immediate Celiotomy in Penetrating Wounds of the Abdomen in War.**—FLAGG (*Journal of the Association of Military Surgeons*, November, 1903).—Nine out of the sixteen such operations done by army surgeons were performed in fixed hospitals where, as the author very properly asserts, everything should be in as good condition for such work as it is possible to find it, else it is directly the fault of the surgeon in charge. This long article contains the opinions of a large number of surgeons on this subject, and judged by the great number of statistics offered, it represents a great amount of work. The author rightly challenges the statement that the chances of any man wounded in war have been taken away by an operation. He speaks of the Connell suture as the best one at our command today for the purpose of closing holes in the intestines. The high mortality existing at present can be lowered in no other way than that now advocated; late operations of this class form the most dreaded chapter of civil surgery, and it remains for military surgeons to properly equip themselves to handle them properly. With the aid furnished by the government, no surgeon has any excuse for being unable to cope with these cases at the present time.

This article is far in advance of its time, when we read from the military surgeons almost everywhere that they are content to let the soldier with a bullet through his intestines be considered as lost.

**The Circulus Vitiosus After Gastro-Enterostomy.**—FOEDERL (*Wiener Klinische Wochenschrift*, No. 41, 1903).—This most interesting and logical article contains many mechanical points which are not sufficiently taken into account by the surgeon. It is worthy of note that the surgeon (Czerny) who has made his anastomosis nearest the plica duodeno-jejunalis, has attained the best results, never having been troubled by the accident of which the author writes. Experiments on the dead gut show that water will leave an overfilled stomach much more slowly than it will one which is only partly filled—that is, after gastro-enterostomy. Further, the swelling of the mucous membrane around the edges of a freshly made opening may be so great as to completely block the same. Another interesting thing is that the convex surface of the gut is shortened at the operation and the concave surface thus made relatively too long. The mucous membrane of the gut may thus be forced into the new opening in just the same way that it blocks the lumen of the intestine when there is a hernia of a part of its wall. This undesirable state of affairs, which the author believes is the cause for many cases of circulus vitiosus, is remedied by simply shortening the mesentery opposite the opening in the gut; he accomplishes this by three stitches in a manner shown by cuts and very simply.

**On the Results Obtainable by Operative Measures in Affections of the Stomach.**—JOHN B. MURPHY, M. D. (*Annals of Surgery*, December, 1903).—Murphy lays great stress on the diagnosis of early cancer, but further than this upon a diagnosis and removal of the conditions which predispose to that form of malignant growth. This has reference, of course, chiefly to ulcer of the stomach and its results. These latter conditions must be determined upon the operating table at exploratory laparotomy and exploratory gastrotomy. The article contains a great deal of statistical material and is, further, of interest since it holds much of the author's personal experience.

**Diffuse Aneurysm of the Popliteal Space.**—M. LE FORT (*Bulletins et Memoires de la Societe de Chirurgie de Paris*, 5 Janvier, 1904).—The patient, a man of fifty-two, had received a bullet wound in the popliteal region two months previous to his entering the hospital. Only two days before he came in he had noticed a tumor forming in this region, and on account of the same increasing rapidly in size he sought surgical aid. The space referred to was entirely filled by the mass, which presented all of the characteristic symptoms of an aneurysm. It was apparent that the sack would rupture soon unless something radical was done, hence an operation was determined upon. On opening the sack it was seen to be lined with a smooth membrane which corresponded in every particular to the ordinary lining of the blood vessels, and at its lowest portion it presented an oval opening which apparently communicated with the interior of the artery. The sack was cut away and the edges of the oval opening freshened and sewn together with catgut. The operative result was perfect in every particular, but when the dressings were removed the same region was found filled out by a tumor very similar to the first. Upon examination it was found that an absolutely new aneurysm had formed at the side of the old one, the stitches having held and the former wound in the vessel having healed perfectly. A large portion of the artery was now completely removed with the result that the trouble was cured.

**The Technique of Artificial Anemia.**—SIEGFRIED SPIEGEL (*Zentralblatt fuer Chirurgie*, December 26, 1903).—The author recites all of the well-known disadvantages which the ordinary Esmarch bandage possesses. It takes time to put it on, it takes strength, technical ability and often presents an impediment to perfect asepsis. The material of which it is made deteriorates and it is often very difficult to remove the bandage; but worst of all, it cannot be partially removed, as may be desirable in closing up a wound. To meet all of these difficulties the author has devised a silk strap which is wound up on a small metal reel. This can be completely sterilized, can be built quickly at any desired tension, and can be wholly or partially loosened in an instant at the will of the operator. Several well-executed cuts serve to illustrate the device better than any verbal description can.

**The Dangers of the Trendelenburg Position.**—P. KRASKE (*Archiv fuer Klinische Chirurgie*).—This very interesting article relates the dangers which may arise in the course of a procedure which is so com-



monly used as to make the paper of decided interest and value to all of us. The principal dangers which the author has seen arise during the course of operations under these circumstances are, first of all, heart disturbance in an already diseased organ, these being due to the fact that the blood pressure was raised on account of the elevated position of the lower portion of the patient's body and extremities. In other cases he has seen intestinal obstruction arise from the fact that a thick, heavy omentum slid to the upper portion of the abdomen by virtue of its own weight, and in this manner dragged with it or entangled the hollow viscera. Knowing that such dangers are present, it seems to the reviewer that it becomes now a small matter for the operator to obviate them, in the first case by failing to use this position in patients who present cardiac disturbance, and in the second instance, to strike out or draw down the omentum or other viscera after a patient has been for a long time in this position.

## THERAPEUTICS.

IN CHARGE OF

ALBERT E. TAUSSIG, M. D.

**Urotropin as a Prophylactic in Scarlatina.**—J. WIDOWITZ (*Wiener Klin. Wochenschr.*, No. 40, 1903).—According to the writer's observations the administration of urotropin prevents the occurrence of nephritis after scarlet fever, probably as a result of the antiseptic properties of the drug. As is well known, the therapeutic effect of urotropin in cases of cystitis and pyelitis depends on the fact that formaldehyde is set free in the uropoetic organs. Proceeding on the hypothesis that scarlatinal nephritis is due to a bacterial lesion of the kidney parenchyma and that this complication could be prevented by the administration of a urinary antiseptic, the writer has been in the habit of giving urotropin in scarlatina, as follows: At the beginning of the attack and again during the third week, he orders urotropin given for a period of three days, three times daily, in doses varying from 0.05 to 0.5 grams, according to the age of the child. In none of the 102 cases in which this therapy was used did a nephritis occur.

The writer admits that the number of cases observed by him is too small to establish the value of urotropin in this condition, but hopes his results may lead to further observations.

**Pilocarpine in Croupous Pneumonia.**—OTTO PELZL (*Wien. Med. Presse*, No. 37, 1903).—The good results obtained by the use of pilocarpine in pneumonia and reported by the writer sometime ago, led to the observation and publication by him of thirty-three more cases treated in this manner. A single dose, consisting of twenty drops of a one per cent. solution of pilocarpine was given in each case, whereby a very active diaphoresis was produced. Usually the pilocarpine was given on the

second day, the first day being devoted to a vigorous course of digitalis, especially if the circulation seemed below par.

In general, the results of this treatment were very good. In half the cases, the administration of pilocarpine was followed within forty-eight hours by a permanent cessation of fever; in one-third of the cases, the fall of temperature was but temporary; in the rest, no effect upon the temperature could be noted. Even in these cases, however, the result of the treatment cannot be called *nil*; the increased comfort of the patient after the sweating, the diminution of the dyspnea and painful cough, the more profuse expectoration, all render the patients more comfortable and usually result in several hours of deep and refreshing sleep.

**A Modification of Two Classical Arsenical Preparations.**—M. DANLOS (*Rev. franc. de Med. et de Chir.; Centralbl. f. d. ges. Therapie*, No. 12, 1903).—In general, larger quantities of arsenic are borne by the organism when given in the form of "Asiatic pills" than when given as Fowler's solution. The only objection to the former lies in the fact that old, hard, Asiatic pills may sometimes pass through the digestive tract without being disintegrated. Instead, therefore, of the usual formula of the French pharmacopœia:

|   |                                |     |
|---|--------------------------------|-----|
| R | Acid arsenios.....             | 0.5 |
|   | Pulver. nigr.....              | 5.0 |
|   | Gummi arab.....                | 1.0 |
|   | Aq. q. s., m. f. pilul. No. C. |     |

The writer prescribes:

|   |                                          |     |
|---|------------------------------------------|-----|
| R | Acid arsenios.....                       | 0.5 |
|   | Glycerini.....                           | 3.0 |
|   | Pulv. nigr. porphyris.....               | 5.0 |
|   | Pulv. gentian, q. s. u. f. pilul. No. C. |     |

This formula has the following advantages: (1) the arsenic being dissolved in glycerin is finely divided; (2) the same reason lessens its irritative effect on the mucous membranes; (3) the pills remain fresh a long time.

**Mercury Hypodermically.**—M. DANLOS (*Nouveaux Remedes*, No. 9, 1903); L. JULLIEN and F. BERLIOZ (*Nouveaux Remedes*, No. 10, 1903).—Dr. Danlos discusses the hypodermic administration of calomel in erysipelas. No form of mercury, he believes, has been found more valuable in obstinate cases of tertiary syphilis than calomel injected hypodermically, or, rather, intramuscularly. All the vehicles hitherto used for suspending the calomel are, however, open to objections. Water will not do at all. Vaseline and the oils dissolve the calomel very slowly and tend to form nodes which prevent the absorption of the drug and may give rise to emboli. Glycerin is very painful, and the gums, which have found advocates, are difficult to sterilize. The writer has found a solution of sugar of greatest service. The sugar solution and the calomel are sterilized separately, mixed in a sterile container and injected by means of a sterile syringe. Jullien and Berlioz have studied some new



mercury compounds for hypodermic medication in syphilis. By combining ammonium cacodylate with oxide of mercury they obtained cacodylate of mercury, a gray powder very soluble in water and containing 56 per cent. of mercury. The dose is one-third to one-sixth of a grain and is well borne. By dissolving the yellow oxide of mercury in a solution of ammonium chloride they obtained a new salt, the ammonium-chloro-mercurate, which is used in the same dose as the sublimate but is usually somewhat better borne.

---

## PATHOLOGY AND BACTERIOLOGY.

---

IN CHARGE OF

CARL FISCH, M. D.

**About Experimental Syphilis.**—E. METSCHNIKOFF and E. ROUX (*Ann. de l'Inst. Pasteur*, 1903, u. *Deutsch. Medic. Woch.*, 1903, No. 52).

**About Inoculation Experiments with Syphilis on Anthropoid Apes.**—O. LASSAR (*Berl. Klin. Woch.*, 1903, No. 52).

Metschnikoff and Roux report the result of the inoculation of fresh syphilitic virus (chancre) into a female chimpanzee; they observed the appearance at the point of inoculation of an ulceration clinically indetical with a syphilitic chancre. (Period of incubation twenty-five days.) A month after the appearance of the lesion on the skin of the animal fifteen squamous papules were observed. Both lesions healed and the animal remained well for fourteen weeks, when it died of a pneumococcus infection. From the secretions of this chancre of the female chimpanzee, on the forty-fifth day from its appearance, a small amount was inoculated into the penis and hip of a second chimpanzee by scarification. Beginning with the thirty-fifth day after this inoculation typical ulcerations developed in both places and gradually the regional lymph glands became enlarged. While the chancre on the leg healed within a month, the penis lesion enlarged and the glandular involvement persisted until the animal died of an intercurrent disease on the forty-fifth day of the experiment. At the autopsy nothing pointing to syphilis could be discovered; there is no report about a microscopic examination.

Lassar reports similar experiments on a chimpanzee by inoculation of the virus into slight wounds on the face and lip. In two weeks two of the places began to indurate and gradually assumed the appearance of a primary lesion, and later a third one developed. After some time secondary skin phenomena were noticed, very much resembling those of syphilis, enlargement of the cervical glands accompanying the development of the chancres. In a postscript Lassar reports that one of the ulcerations had been excised and microscopically examined, and the typical structure of an initial sclerosis found. The published micro-photographs of the sections are convincing. Another experiment with inoculation on the penis was only lately commenced but so far has given no results.

These two papers, appearing at the same time, seem to leave no doubt that at last experimental syphilis has become a tangible subject of investigation.

---

**The Occurrence of the Colon-Bacillus on the Hands.**—C. E. A. WINSLOW (*Jour. of Med. Research*, December, 1903).—That the infection in typhoid fever is not always water borne or milk borne, but that not rarely it must occur direct from patient to patient, has been shown seemingly by a number of published experiences. The author, therefore, made an extensive investigation into the bacteriologic flora of the hands of a great number of persons, directing his efforts towards the discovery of the colon-bacillus. He examined the water obtained by washing the hands of three persons and could demonstrate the bacillus in ten cases. This would make it easy to understand how readily the typhoid bacillus may be transmitted by the hands of those affected with the disease or of their non-professional attendants.

---

**Yellow Fever.**—MARCHOUX, SALIMBENI and SIMOND (*Ann. de l'Inst. Pasteur*, November, 1903).—This paper forms the report of a commission that was sent to Brazil by the Paris Pasteur Institute to investigate the epidemic of yellow fever existing there. The commission spent its time in Rio de Janeiro from November, 1901, until late into 1902. The results of their investigations need not be detailed here, for the reason that they were well known by American scientists before they were published. Rarely has it occurred that an important discovery found such complete confirmation, going into the minutest details, as has the classic work of Reed, Carroll and Lazear by the researches of the French authors. Partly based on the work of the Americans, and supplied with an abundance of material and facilities, they have added nothing of importance to the known facts; they could only confirm what Reed and Carroll had already said, so that this paper is one of the greatest recognitions ever accorded an observer of the almost complete exhaustion of a subject. This is the more gratifying, since this recognition is given by the French colleagues with admiration and enthusiasm. An interesting detail may be mentioned referring to the fact that the authors have studied very closely the mosquito parasite, alleged by the working party to be the etiologic factor of yellow fever; they concluded, of course, that no such connection exists. The paper proves that the work of Reed and Carroll represents so far the whole of what we have learned of the etiology and pathology of yellow fever.

---

**On the Appearance and Significance of Certain Granules in the Erythrocytes of Man.**—VICTOR C. VAUGHAN, JR. (*Journal of Medical Research*, December, 1903).—The nature of the basophilous granulations of the red corpuscles has been widely discussed, and while in a routine way considered as a phenomenon indicating degenerative processes of the discoplasm, several observers have always connected them with the disappearance of the nucleus. Lately Schmidt (and the reviewer) compared the evidence for both sides, and from a thorough investigation of the conditions under which the granulations occur, concluded that in-



stead of a degenerative, they must be rather indicators of a reconstructive tendency of the blood condition found. The increase of the number of granulated cells appearing in blood is always the sign of a stimulated activity of the hematopoietic centers, the granules being only the remnants of nuclei of corpuscles that are sent into the circulating blood before the usual appearance is attained. In an ingenious and fascinating paper Vaughan publishes observations that finally settle the question in this direction. Instead of examining dried specimens, he used the method of staining the blood by polychrome methylene-blue *intra vitam*. The granules stain with the methylene-azur quota of this fluid. From 0.5 to 2 per cent. are present in the corpuscles in normal blood, and in the study of pernicious anemia, of fetal blood and of bone-marrow we can observe their formation through the disintegration of the nucleus. That they are so rarely seen in dried specimens is due to the fact that the drying leads to a homogeneous diffusion of the nuclear debris through the discoplasm, thus producing the phenomenon known as polychromasia. Very interesting and important, also, is the fact that the blood-platelets show the same granulations, and since the consensus of opinion has long since brought these bodies into connection with retrogressive changes in the red cells, their nature as nuclear residua has found a new confirmation. In this connection must be mentioned the old observation that where granulated corpuscles abound platelets are very scarce (pernicious anemia), and *vice versa*. Vaughan has conclusively established the nuclear origin of these granulations.

---

**A Hitherto Undescribed Fibrillar Substance Produced by Connective Tissue Cells.**—F. B. MALLORY (*Jour. of Med. Research*, December, 1903).—By means of a modification of his connective tissue stain, Mallory has discovered connective tissue fibrils in certain locations different from the ordinary forms. He sums up his conclusions by stating that connective tissue cells produce, in addition to elastic fibres and the ordinary intercellular fibrils, a third variety (fibroglia-fibrils), which differs from the others chemically and morphologically, and which have the same staining qualities apparently as the coarse, differentially staining (myoglia) fibrils of smooth muscle cells. The fibroglia-fibrils bear the same relation to the connective tissue cells that neuroglia cells bear to the neuroglia cells. They are present in great numbers in all actively growing connective tissue, both of inflammatory and of tumor origin. They are scarce in normal tissues, except perhaps in certain situations; they apparently form the true basement membrane of the tubules of the kidney, of the coil-glands of the skin and of the glands and ducts of the breast. They also occur in abundance beneath the endothelium lining the arteries and the larger veins. It is not easy to suggest the significance of these fibrils. It is hardly conceivable that they give rise to the ordinary fibrils by splitting or by diminishing in thickness and by changing in chemical properties. Their presence in intimate relation to the protoplasm of the cells is, perhaps, an argument in favor of the view that the ordinary fibrils are intercellular in origin and not a cast-off product of the protoplasm.

**Contributions to the Doctrine of Natural Immunity.**—K. KISSKALT (*Zeitschr. f. Hyg. und Inf. Krankh.*, Vol. 45, Heft 1).—By inoculating mice, subcutaneously or otherwise, with virulent and avirulent bacteria, the author tries to solve this problem. His method is the microscopic examination of the tissues at and in the neighborhood of the site of infection. He says that his investigations have shown that only in the leucocytes may we assume to be present the natural protective powers against pathogenic bacteria, the latter being eliminated by phagocytosis. The active agent in natural immunity is, therefore, not preformed in the body-juices. The degree of the virulence of a bacterium does not depend upon its resistance to the protective powers of the body, but, above all, upon the degree of its toxic effect, this latter quality preventing the leucocytes from devouring the microbe or sequestering it by accumulating around it.

---

**Studies About the Intestinal Origin of Tuberculosis.**—E. NEBELTHAU (*Muench. Medic. Woch.*, 1903, u. *Klin. Jahrbuch*, Vol. 11, Heft 4).—Koch's publication about the question of the identity of human and bovine tuberculosis gave stimulus to this investigation. Nebelthau introduced tubercle bacilli into the small intestine of larger animals (dogs, goats, calves). For this purpose he used a very ingenious method of interrupting the continuity of the intestinal tube, and he concludes that the intestinal secretion must not be taken into account in the prevention of an infection by means of virulent bacilli. It is not necessary that ulcerative lesions follow the introduction of the bacilli; in dogs such lesions are not found even after a period of two weeks. The tubercle bacilli can penetrate the intact intestinal wall and lead to tuberculous formations, though of quite varying character. The intestine of goats is less resistant than that of the dog, and in the goat extensive lesions can be produced. The calf exhibits about the same degree of resistance as the dog. These experiments are the basis on which the author formulates or tries to formulate conclusions as to the epidemiology of tuberculosis in man and animal. The modes of infection in man are discussed, especially the infection by way of the intestine. For reasons analogous to those given by Behring, he prefers the study of this infection in children. The statistics compiled by him lead him to the statement that probably in 19 per cent. of the cases the infection in children occurs from the intestine. In opposition to the views of Koch, the position is taken that this infection can occur, and often does occur, without producing local lesions in the structures of the alimentary canal. The condition of the juvenile intestine resembles that of the goat more than that of the calf.

For further studies two questions have to be considered separately: the susceptibility of the wall of the intestine for tuberculous infection, and its permeability for the bacilli. *A priori*, we are justified in believing that the latter may gradually decrease in the course of years, while the susceptibility for developing local lesions may persist or only slightly change, so that it would take a greater and more general depression of the whole constitutional condition of the organism to favor an increase of this susceptibility. As is well known, the greater permeability of infantile mucosæ for tubercle bacilli in young animals was



established by the studies of Behring and Roemer, and these investigations found their anatomical explanation by the work of Disse.

Summing up, Nebelthau deals with the problem brought out by Koch: the problem whether bovine tuberculous material can cause tuberculosis by introduction into the human intestinal tract. Koch denies this. The great material examined by the author in the polyclinic of Halle showed that in each case direct infection from one person to the other had occurred. It is only a concession to routine sanitary rules with regard to a possibly highest and most effective prophylaxis, that the author for the present recommends to figure with the possibility of an infection of the respiratory as well as of the intestinal tract by both the human and the bovine bacilli.

---

**Contributions to the Etiology of Tuberculosis.**—F. MITULESCU (*Zeitschr. f. Hyg. u. Infect. Krank.*, 1903, Vol. 44, Heft 3).—Mitulescu reports the results of his examinations of books and journals of public libraries. He searched in ninety-seven of these books for tubercle bacilli, by injecting into guinea-pigs the water with which leaves from the books had been washed. More than a third of the animals developed tuberculosis. It must be mentioned that this occurred only with material from books that had been in use for longer than three years (3-6). Besides those animals dying of tuberculosis, a number of others succumbed to septic infection or to malignant edema.

---

## GYNECOLOGY AND OBSTETRICS.

IN CHARGE OF

HUGO EHRENFEST, M. D.

---

**A Critical Consideration of Modern Gynecological Operations.**—FRITSCH (*Chrobak-Festschrift.*, 1903; rev. *Centralbl. f. Gyn.*, No. 49, 1903).—The writer begins with the mooted question whether to operate by the abdominal or vaginal route. He warns against the tendency of certain gynecologists to use but one of them on principle, and advises those who prefer the vaginal route not to exaggerate the dangers of laparotomy. In cases of fibro-myoma, the vaginal operation will be permissible if the patient has borne children, if the vagina is wide and the tumor not too large. In all other cases laparotomy must be given preference, especially if the tumor is intraligamentous, if the uterus shows a very irregular form and suggests the possibility of a conservative myomectomy. Fritsch believes that the man who operates upon myomas on principle by the abdominal route will meet with fewer disappointments and accidents than the man who always operates through the vagina.

The author is very emphatic in advocating the abdominal route in all cases of purulent inflammations of the uterine appendages. He prefers laparotomy in the removal of ovarian cysts, even if they are small. He operates through the posterior vaginal fornix in cases of pyosalpinx only when the tumor can be pulled down into the vagina with the uterus. He

approves of the vaginal way in cases of ectopic pregnancy only if the fetus is dead and the operation is performed with the idea of removing an old hematocele.

Interesting are the author's views on the question of carcinoma. He does not believe in the extensive abdominal radical operations of the present day. He wants all operative interference limited to early cases, and he believes that for these "good" cases the vaginal panhysterectomy will soon regain its old favor.

Two points are of importance in a consideration of all the various operations devised for the rectification of malpositions of the uterus: first, the danger involved in the operations and their sequelæ, secondly, the results as far as recurrence is concerned. From this point of view the writer arranges the operations as follows: Ventrofixation is the most effective of all operations, and it fits almost every case. The operation of Alexander-Adams is almost free of danger, and in cases of freely movable uteri just as serviceable as ventrofixation. Vagino-fixation and vesicofixation, in the author's opinion, do not offer any advantages, but have some drawbacks; therefore, these operations should be reserved for cases in which the operation of antefixation is intended to be combined with some other interference—*e. g.*, sterilization, extirpation of small tumors, etc.

---

**The Exaggeration of the Tendon Reflexes in Patients Suffering From Cancer.**—DE BUCK and O. VAN DER LINDEN (*Presse Medicale*; rev. *Centralbl. f. Gyn.*, No. 51, 1903).—The writers have observed that a distinct exaggeration of the tendon reflexes may be found in almost every case of carcinoma or sarcoma. As a rule some of the skin reflexes, especially of the abdomen, are also increased. They believe that a careful examination of all the reflexes will prove a valuable aid to the clinician in doubtful cases. This increase of the reflexes is more pronounced in the earlier stages of carcinoma.

---

**Does the Appendix of the Fetus Contain Meconium?**—A. LOW (*London Lancet*, May 3, 1903).—The opinion seems to prevail that the fetal appendix does not contain meconium. Low found in twenty-five post-mortem examinations that the lower portions of the small intestines contain meconium as early as the fourth month of pregnancy, the large intestines and rectum become filled between the fifth and eighth month. The appendix contained meconium in every case after the fourth month.

---

**Pregnancy in Girls Under Sixteen Years.**—G. PICARD (*Revue Prat. d'Obstetr.*, 1903; rev. *Centralbl. f. Gyn.*, No. 51, 1903).—Among 31,921 women delivered in the clinic of Professor Picard, of Paris, there were but 38 younger than sixteen. They had menstruated for the first time at an age between ten and a half and fourteen, and as a rule had become impregnated after very few sexual acts, in several cases after but one. They did not offer any abnormalities during pregnancy. One had an albuminuria, another a few slight eclamptic convulsions. Twenty-nine carried to full term, seven were delivered prematurely; in two cases the fetus died before labor, in one instance due to syphilis. No noteworthy abnormalities were observed concerning labor. The average duration of



labor was eleven hours, the longest having been twenty-two hours, the shortest three and a half. All deliveries were spontaneous. The puerperium was that usually observed in primiparæ. The average weight of the newborn children was normal. Picard's observations explode the teaching of some authorities, that in early life disturbances and irregularities in the course of pregnancy, labor and the puerperium are often seen.

---

## PEDIATRICS.

IN CHARGE OF

ALFRED FRIEDLANDER, M. D.

---

**Pulse and Arterial Tension in Diphtheria.**—DENIS (*Rev. Mens. des Mal. de l'Enf.*, December, 1903) basing his observations on about 400 carefully studied cases, believes that a knowledge of the character of the pulse and the arterial tension in diphtheria is of decided value from the standpoint of prognosis. The diphtheritic toxin causes an increase of the pulse rate and a lowering of the arterial tension, and the degree of change is a measure of the intoxication. In moderately severe cases the average pulse rate runs from 100 to 120. Grave cases usually show a somewhat higher rate, but the rate never remains over 140 for any great length of time: either death supervenes early or marked improvement sets in. Indeed, some authorities go so far as to say that "death is the rule if the pulse exceeds 150." It has been noted that the injection of antitoxin is followed within a few hours by a decided fall in the pulse rate, except in the severest cases. Sudden increase of the pulse rate is usually a sign of bad prognostic import. The onset of convalescence is usually accompanied by a more or less marked bradycardia, but it is to be noted that in these cases the rhythm is perfect, the volume good and the tension normal or nearly so. Bradycardia with very low pulse tension is of the gravest prognostic import, so that sudden fall in the pulse rate associated with decided lowering of tension, is often the precursor of death. In the great majority of cases the pulse is regular throughout the course of the disease, although in the convalescence of very severe cases, irregularity and intermittence may occur. The direct estimation of the pulse tension may be of very great value, and the study of rate and tension together afford an excellent guide as to the general condition of the patient. [Of late, attention has been called to the value of systematic estimation of pulse tension as a means of determining the amount of stimulation necessary in a given case.—Ed.]

---

**Situation and Physiological Displacement of the Apex of the Heart Between the Fifth and Fifteenth Years.**—TERRIEN and LAMY (*Rev. Mens. de Mal. de l'Enf.*, December, 1903).—In childhood the apex beat of the heart is in the fourth interspace, when the child is erect. In the horizontal position, the apex beat is found to the left of the midclavicular

line in the first years of life, in this line at about the seventh year, and within this line after this time. The authors have studied the actual mobility of the heart in children without cardiac or pulmonary lesion. The position of apex beat was determined in the following positions:

1. Dorsal decubitus, the child being absolutely horizontal.
2. Right lateral decubitus, with the right arm held at a right angle to the body, in order to have a uniform position for examination.
3. Left lateral decubitus, with the left arm at a right angle.

As the result of a great many carefully studied cases, the authors have reached the following conclusions:

In the dorsal decubitus, the apex is found in the fourth interspace, outside the midclavicular line up to the fifth year. At ten years, the apex reaches the fifth rib in the midclavicular line, and toward the fourteenth year it reaches the fifth interspace within the line.

In the left lateral decubitus, the mobility of the heart is found to be very considerable, even in the earlier years of life. The apex moves down and out. At five years the lateral motion amounts to about 4.5 inch, the vertical to 1.5 inch. At seven years the lateral movement is almost an inch and the vertical over half an inch. Between twelve and fifteen years the lateral movement amounts to 1 1-5 inches, and the vertical to 1 inch.

In the right lateral decubitus, the displacement is never nearly as great as in the left lateral, the movement amounting to about 3.5 inch, and being for the most part horizontal.

It was noticed, furthermore, that when the displacement in the left lateral position was considerable, it was only slight on the right side, so that the child must be placed in both positions, in order to judge of the complete cardiac mobility.

---

**Some Cases of Infantile Nephritis.**—FRY and MARTIN (*Arch. of Ped.*, January, 1904) report the results of the examination of the urine in one hundred infants under three months. The difficulty in obtaining specimens for examinations was overcome by the following expedients: In male children a bottle was firmly bound to the inner side of the thigh, and the child made to lie on the side until the specimen was obtained. In females, reflex stimulation of the bladder was used either by the application of cold to the pubis, or by direct manipulation of the meatus, a bottle being held in place to collect the urine. Of the one hundred infants examined, sixty-five were artificially fed and thirty-five breast fed. The reaction was acid in 64 per cent. of cases, neutral in 36 per cent., alkaline in none. It was noted that the older the infants the more liable was the urine to be acid.

Albumen was present in nineteen of the cases, varying from a trace to a distinct ring, by the Heller test. Of these cases fifteen were bottle fed and four breast fed. Of these nineteen cases seventeen also had casts, hyaline and granular mainly, a few epithelial, but no blood casts. Of the one hundred cases, however, thirty-one had casts—*i. e.*, fourteen had casts without albumen. Uric acid was abundant in twenty-six cases, twenty-three of which showed casts. Sixteen of these twenty-six cases died and autopsies were obtained in seven. Each of these showed parenchymatous nephritis with uric acid infarcts, while three cases showed



interstitial changes as well. In addition to the sixteen fatal cases six others had clinical evidence of nephritis. While the relation of increase of uric acid to nephritis in infancy cannot be considered settled as yet, it is significant that of the twenty-six cases in this series in which uric acid was increased, twenty-three had casts, and that of these twenty-three sixteen died. The authors do not believe that the nephritis of infancy is necessarily always associated with the toxic conditions incident to marasmus, and they consider it at least possible that there may be some connection between increase of uric acid and the production of a form of nephritis, which under favorable conditions may be recovered from without serious permanent disturbance.

---

**Etiology of Rheumatism: Its Obscurity, Prevention and Management in Childhood.**—According to Winters (*Medical Record*, January 9, 1904) rheumatism is caused by non-neutralized acid products of proteid metabolism. Deficiency of basic constituents and of vegetable acids in food, excess of animal proteid, particularly nuclein, imperfect oxidation and defective elimination are important etiological factors. Therefore, foods rich in basic constituents and vegetable acids, organically combined with vegetable proteid and with a minimum of animal proteid, together with proper oxidation, cure and prevent rheumatism.

To this end potassium and sodium compounds are all-important. Cereals, potatoes and bread are all rich in potassium and must, therefore, be taken freely. The salts of vegetable acids, by oxidation in the body, form alkali carbonates. Vegetable acids are thus also important articles of diet, to be obtained through the liberal use of fruits.

Attention is then called to the obscure nature and insidious onset of rheumatism in childhood; to the existence of many rheumatic equivalents—*e. g.*, tonsillitis, torticollis, pleurisy, recurrent vomiting, etc. In many cases anemia with endocarditis are the first manifestations. Irregular temperature in childhood is always suspicious and should lead to careful examination of the heart.

For the treatment of the acute attack, Winters advises strict milk diet, with, later on, the addition of cereals. The use of animal broths he considers useless and pernicious. The dietetic management is all-important in the treatment of rheumatic children.

[Attention is called to this article as an illustration of complete adherence to the "chemical" theory of the causation of rheumatism. The general trend of opinion today inclines to the belief that while faulty nutrition may be (and probably is) a predisposing factor, the actual exciting cause of rheumatism is probably bacterial; that rheumatism is, in other words, an infectious disease, and not a disease of metabolism, *per se*.—ED.]

## NEUROLOGY.

IN CHARGE OF

SIDNEY I. SCHWAB, M. D.

**A Cystic Epithelioma of the Hypophysis Without Hypertrophy of the Skeleton.**—CESTAN and HALBERSTADT (*Revue Neurologique*, December 30, 1903).—In view of the importance of the presence of tumors in cases of acromegaly involving the hypophyseal region, the account of the finding of a tumor here with no symptoms is of interest. The case is that of a man sixty years old afflicted with a progressive mental malady accompanied by progressive loss of intelligence and attacks epileptiform in nature. At the autopsy a tumor arising from the selle turciaca and extending posteriorly to the optic chiasma was found. The tumor was cystic in character and arising as it did from glandular portion of the hypophysis its epitheliomatous nature was to be expected. This report is of value for the reason that it shows that something else beside a tumor in this region is necessary in order to cause the changes which are found in acromegaly.

**A Case of Secondary Epilepsy.**—FOURNIER (*La Revue Medicale du Canada*, January 6, 1904).—This case is of interest chiefly for the quotation from the famous Parisian syphilographer which closes the article. The case briefly is that of a young man of twenty-eight years who became the subject of true epileptic attacks for the first time at that age. Under an antispecific treatment the attacks have ceased, though time enough has not elapsed to regard this as a complete cure. Fournier's dictum is as follows and it should be widely known: When an adult over thirty years of age is attacked for the first time by an epileptic convulsion and if the state of general health is good, there are eight or nine chances out of ten that this epilepsy is of syphilitic origin.

**Tumors of the Ponto-Medullo-Cerebellar Space—Acoustic Necromata (Central Neurofibromatosis).**—FRAENKEL and HUNT (*Medical Record*, December 26, 1903).—A number of cases are described under the above title. These cases are of great interest because they point to a new type of brain tumors and because they seem to be favorably located for the possibility of surgical operation. These cases consist in the formation of tumors, single or multiple, on one or more cranial nerves. The acoustic nerve is the one most frequently affected, and next in order the trigeminus. The pathological occurrences on the cranial nerves are identical with those of generalized neurofibromatosis of the cerebrospinal and sympathetic nerves. The condition is by no means a rare one. Five cases are here reported with autopsies. Three were cases of tumors of the acoustic, one a case of bilateral tumor of the acoustic, and one a case of tumor of the trigeminus. These tumors are probably all teratomata. The role played by trauma has been exaggerated by previous observers. The conclusions are as follows: The foregoing cases



show a common origin from cranial nerve trunks. Their pathological structure is of a kindred nature, neurofibromatosis, pure or in various stages of metamorphosis and transformation. The locality is almost identical—the angle formed by the pons medulla and the cerebellum. Their symptomatology, because of this location, is in the essential features analogous. The certainty of localization, the essentially benign nature of the growths, their loose attachment to the meninges and nerve trunks distinguish this group of intercranial tumors as a most favorable one for surgical interference. In view of all this, there is justification for the suggestion to assign a separate place to this syndrome in the group of intercranial tumors.

---

## GENITO-URINARY SURGERY.

---

IN CHARGE OF

H. McC. JOHNSON, M. D.

---

**Note Upon the Bladders of Prostatics Without Prostate.**—MOTZ and ARRESE (*Ann. des Mal. des. Org. Urin.*, December 15, 1903).—From an examination and study of fifteen bladders of patients whose urinary symptoms were those of prostatic hypertrophy, but in which there was no hypertrophy, the authors found that the vessels were normal in eleven cases, the bladder muscle hypertrophied in twelve cases, considerable secondary sclerosis of the muscle in two cases, and a slight primitive muscular atrophy in one case. They, therefore, conclude that vesical atony of "prostatics without prostate" is not caused by the bad state of the muscular tissue (contrary to Cienchanowski's conclusions).

The practical observation to be drawn from these deductions, as Albarran's experience shows, is that the extirpation of a gland which at least in appearance could form no obstacle to the emission of the urine, can re-establish the normal function of the bladder with individuals who have had complete retention.

---

**Urethrotomy by the Combined Use of an Anterior and Posterior Sound Used as Guides.**—PENN (*Jour. A. M. A.*, January 9, 1904).—The author mentions the difficulties encountered in some cases while attempting an external perineal urethrotomy "without a guide," and the dangers coincident upon a prolonged search for the urethra. He urges the expediency and simplicity of early retrograde catheterism, believing there is less danger and shock than from a difficult perineal operation. Having a distended bladder to puncture suprapubically, he bent the canula and trocar so as to give it the curve of a urethral sound, and tapped the bladder with it. Through the canula he easily passed a small silver sound into the urethra, thus doing retrograde catheterism readily. This procedure has served the author admirably in two cases. There is much less trauma and shock from a mere puncture than from the usual cutting operation for retro-catheterization, and the danger of infiltration is less.

**Le Rein Extopique Croise.**—CATHELIN (*Ann. des Mal. des Org. Urin.*, December 1, 1903).—Under the above name Cathelin designates that condition of misplaced kidney in which one kidney is placed below its fellow on the same side of the vertebral column, whether the lower kidney is a part of or entirely separated from the upper one. He collects fourteen cases from literature where the two organs are intimately interwoven, and five cases in which the kidneys were entirely separated, the one below the other, both on the same side of the vertebral column. However, this abnormal position of the kidneys does not interfere with the normal arrangement of the ureteral orifices in the bladder.

**A Case of Complete Bilateral Duplication of the Ureters.**—DECHERD (*Am. Jour. Med. Sciences*, January, 1904).—Both ureters on each side were complete from kidney to bladder. The upper ureters drained the upper third of each kidney and the lower ureters the lower two-thirds. All four ureters had separate pelvis and separate openings into the bladder, so that there were four ureteral orifices into the bladder, the lower being two and one-half cm. apart, and those on each side one cm. from its fellow.

**The Treatment of Vesical Papilloma by Injections.**—HERRING (*British Med. Jour.*, November 28, 1903).—The author has obtained good results from injecting the bladder in cases of vesical papilloma by irrigations of silver nitrate solution. Beginning with weak solutions the strength is gradually increased according to the tolerance of the patient. He says:

1. That recurrence of papilloma after removal by suprapubic cystotomy may be effectually held in check by injections of silver nitrate.
2. That if injections are made, when it has been found impossible to remove the growth entirely by operation, the recurrence of the symptoms is retarded longer than could be expected without the treatment.
3. That much of a tumor may be removed by the urethra without serious hemorrhage, and a result gained equal in some cases to that of a suprapubic operation.
4. That there is reason to hope that papillomatous growths may be entirely destroyed by long-continued applications of silver nitrate.

**Ascending Renal Infection with Special Reference to the Reflux of Urine from the Bladder into the Ureters as an Etiological Factor in its Causation and Maintenance.**—SAMPSON (*Johns Hop. Hosp. Bul.*, December, 1903).—This excellent study and report of experiments upon ascending renal infection and urinary reflux into the ureters is replete with interest. The subject is so broadly considered that an abstract could hardly cover the article. The author, however, gives the following conclusions:

1. The vesical portion of the ureter changes under the various degrees of dilatation and of intravesical tension of the bladder, and in each of these conditions one may find special provision for guarding the lumen of the ureter and thus preventing a reflux of urine from the bladder into the ureter. Under all conditions of the bladder the direction of the current of urine from the kidney to the bladder is a constant factor in the prevention of ascending infection. In addition there are present:

- a.* In the distended bladder, the very oblique course of the ureter and



the long ureteral valve, the lateral walls or labia of the ureteral orifice, and the mucosa of the ureter.

*b.* In the contracted bladder the course of the ureter is less oblique, the ureteral valve is shorter and these factors apparently play a less important part in the protection of the ureter than they do in the distended bladder. On the other hand, additional protection is afforded by a puckering of the ureteral orifice; the ureteral labia may come together and the ureteral mucosa is thrown into folds.

2. The anatomical structure and physiological action of the ureters as well as clinical experience would indicate that the function of the ureters is not only to carry urine from the kidneys to the bladder but also to prevent fluid from passing into the ureters from the bladder, and that under normal conditions it is impossible for the latter to take place. Cases have been reported which contradict this statement. The fact that an occasional case has been reported in which apparently a reflux has occurred, especially when nothing is known of the condition of the ureteral orifice in these instances, cannot be regarded sufficient evidence for supposing that it may occur in all cases.

3. Organisms may be conveyed from the bladder to the kidney through the following channels:

1. The general circulation.

2. The vesico-utero-ovario-renal anastomosis. There is both a venous and an arterial communication between the renal and vesical vessels through the ovarian and uterine vessels.

3. The blood vessels of the ureter. The renal and vesical vessels may communicate with each other through the free anastomosis of the ureteral vessels.

4. The lymphatics. The communication between the lymphatics of the bladder and those of the kidney is indirect, either through the local glands of the bladder and kidney or through the lymph vessels of the ureter. (Sakata.)

5. The lumen of the ureter. This may be as follows:

*a.* By injuries of the intravesical portion of the ureter.

*b.* By the extension of an inflammatory process from the bladder through the ureteral walls or along the lumen of the ureter. This is probably the most frequent way.

*c.* By organisms traveling up the ureter, especially when the current of urine from the kidney to the bladder is interfered with by a stricture or something occluding the lumen of the ureter.

*d.* By a reflux of urine from the bladder into the ureters, which may be due to:

1. Intravesical pressure, forcing the urine into the ureter.

2. Reverse peristalsis on the part of the ureter carrying urine from the bladder into the kidneys.

3. By suction of air into the ureters, when patients are examined in the knee-breast posture, through an open cystoscope.

*The reflux of urine from the bladder into the ureters may be considered an etiological factor in the causation and maintenance of renal infection only when the intravesical portion of the ureter is diseased, thus impairing its function, or when some ureteral abnormality exists.*

Two accessory etiological factors of great importance in the causation of renal infection must be considered:

1. An injured kidney; that is, one which presents a lowered *local* resistance. The most frequent cause of this is probably a ureteral stricture due to cystitis or calculus.

2. General ill health of the patient; that is, lowered *general* resistance.

## LARYNGOLOGY AND OTOTOLOGY.

IN CHARGE OF

WILLIAM E. SAUER, M. D.

**A New Method of Rapid Extirpation of Nasopharyngeal Fibromata, With Report of Cases.**—KING (*N. Y. Med. Jour. and Phila. Med. Journal*, December 19, 1903).—After discussing the different methods of treating nasopharyngeal fibromata, the writer describes a method which he claims inflicts less traumatism, is quicker and more effective than others. Under chloroform anesthesia a high tracheotomy is performed and a tube inserted. With the patient in Rose's position, the head supported by an assistant, and a mouth gag in place, the fingers of the left hand are introduced in the nasopharynx to ascertain carefully the outlines of the tumor and the position and extent of the base of implantation. This step in the operation is considered of great importance, for as soon as the size and point of origin of the pedicle are made out, the fingers are to serve as a guide for the operation of scissors, introduced through the nose on the side where the pedicle is more accessible. The scissors to be used for this purpose are a strong pair, with long handles and short blades, slightly curved on the flat. The long handles offer a strong leverage so that the toughest tissue can be cut through with them. The closed blades are introduced carefully along the septum until the point can be felt in the nasopharynx. The instrument guided by the fingers to the pedicle, with the convexity upwards, the pedicle is divided. As soon as the tumor is felt detached in the pharynx, it can be withdrawn through the mouth. The bleeding is usually profuse. The use of a gauze pack aided by the tendency to spontaneous arrest when the tumor is removed will check the bleeding in a short time. If the growth has been completely removed the tube can be removed and the wound closed. If the hemorrhage has been copious the patient should be allowed a few days' rest before being subjected to further operation. Too much time should not be lost before attacking the root of the tumor. Remaining fragments can be removed under light with a snare, cutting forceps or scissors, or destroyed by the use of the cautery. The histories of three cases are given in detail.

**On the Use of Thigenol in Diseases of the Ear.**—URBANTSCHITSCH (*Monatsschrift fuer Ohrenheilkunde*, Jahrg. xxxviii, No. 11).—Since August, 1903, the author has been experimenting with thigenol, a



synthetic sulphur compound containing 10 per cent. of sulphur, in acute and chronic inflammatory conditions of the ear. His results in many cases were very satisfactory and in others he obtained results which could not be obtained by other drugs. In acute middle-ear inflammations the instillation of a 20 per cent. solution of the drug in glycerine not only relieved the pain, but was of decided curative value, even when there was no perforation present. In the chronic middle-ear inflammations solutions of the drug in diluted alcohol or peroxide of hydrogen were employed. Especially good results were also obtained in acute and chronic eczematous conditions of the external auditory canal and auricle. Eighteen cases are reported in detail.

---

**Shall We Operate on Deformed Septa in Cases of Atrophic Rhinitis?—**KATE BALDWIN (*Jour. A. M. A.*, January 9, 1904) answers in the affirmative. The writer says to operate after a careful study of the cases and a few thorough cleansings. If the sinuses on the roomy side are involved, they should be operated upon first. Then as completely as possible correct the septal deviations, removing only the thickenings necessary to bring the septum to the median line. Later on the septum can be smoothed up according to individual demands. As the tissues have not the recuperative power of normal tissues, much care must be used in this operation, not only to remove as little tissue as possible to gain the desired correction, but to make no undue or unequal pressure, especially on the cartilages. Change the splint frequently, and continue its use the shortest time possible. The pin should never be used in an atrophic septum. A pin will often cause a perforation in twenty-four hours. All cut edges must be stimulated to secure an over, rather than under, inflammatory reaction. The excessive granulation can be easily removed. When these precautions are taken, operative interference will hasten the cure of atrophic cases.

---

**The Efficacy of the Treatment of Acute Otitis Media by Aseptic Drainage.**—GRADLE (*Jour. A. M. A.*, January 2, 1904).—The object of the author's paper is to show the superiority of the treatment of acute otitis media by aseptic drainage. The principles of the method are paracentesis as soon as the diagnosis is made, and continuous absorption of the discharge by an aseptic gauze drain in the meatus and a large dressing over the auricle. After sterilization of the meatus and auricle by means of carbolic solution, the sterility of the gauze is further assured by the liberal use of powdered boric acid in the dressing. The external gauze pad is changed as soon as moisture shows, while the tampon in the meatus may be left twenty-four to forty-eight hours at the time. The character of the discharge is taken as a criterion as to the efficiency of the treatment. In the milder cases, which either perforate spontaneously or are punctured within the first or second day, the discharge is always entirely serous, and neither stringy nor purulent. The writer believes the same rule holds good, no matter how severe, provided the drumhead is punctured early enough. The change from a serous to a purulent or mucopurulent secretion seems to depend mainly on insufficient removal of the fluid. In order to be successful, the treatment by aseptic drainage requires skillful supervision. When successfully car-

ried out it has yielded the writer the quickest results, and in no case did he ever see any complication as long as he succeeded in keeping the discharge serous.

## OPHTHALMOLOGY.

IN CHARGE OF

JOHN GREEN, JR., M. D.

**The Effect of Iodide of Potassium on the Eyes.**—BOUZITAT (*Rec. d'Ophthalm.*, October, 1903).—A patient with bilateral stenosis of the lachrymal canals developed a corneal ulcer of the right eye which, despite treatment, terminated in necrosis of the corneal tissue and prolapse of the iris. Later the left eye was attacked by a similar process which progressed until vision was reduced to light perception. Enucleation of the fellow failed to check the disease. It was then discovered that the patient had been taking, during the preceding three months, four grams daily of potassium iodide for a nasal affection. On cessation of the drug the ulcer healed promptly.

Potassium iodide increases the activity of the conjunctival glands and thus causes conjunctivitis. In the present case the secretion was rendered virulent by admixture with the septic material from the lachrymal sac.

**Hallucinations of Vision.**—H. F. HANSELL (*Am. Med.*, January 16, 1904).—In this paper Hansell considers "the erroneous mental conception derived from diseases of the interior of the eye by which the retinal or nervous stimulus is perverted." These hallucinations arise from: (1) Errors of refraction—*e. g.*, the astigmatic individual sees an object distorted, etc. (2) Paralysis of an ocular muscle. Two images are seen, "neither of them correct, because the mental conception must be formed without the association of the binocular co-ordination and the physiologic double retinal image." (3) Opacities of the media give rise to a mental impression of cloudiness, fog and smoke. (4) Diseases of the retina, choroid and optic nerve. The pressure of inflammatory material and blood irritates the rods and cones of the retina, thus accentuating the normal activity of the tissues, giving rise to flashes of light, etc.

**A Case of Congenital Aniridia with Dislocation of Both Lenses.**—MOISONIER (*La Clin. Ophthalm.*, December 25, 1903).—The patient was an undersized adult male, with divergent squint and lateral nystagmus. Both irides were entirely absent. In the right eye the lens was dislocated upward and backward, and the same condition obtained in the left eye, though in slighter degree. Both lenses were the seat of fine scattered opacities. The retina was normal, the disks rather pale.

**The Corneal Lesions of Acquired Syphilis.**—SYDNEY STEPHENSON (*Brit. Med. Jour.*, September 26, 1903).—Acquired syphilis affects the cornea primarily in two different ways:



- (1) An interstitial diffuse or parenchymatous keratitis.
- (2) A true keratitis punctata.

The first type is usually unilateral, the opacities occurring in patches. The second consists of groups of greyish spots (localized gummatous infiltrations) occurring in the substance of the cornea. Both types promptly respond to specific treatment and the outcome is favorable. The phenomenon is a tertiary one and includes from two to ten per cent. of all cases of interstitial keratitis.

---

**A Hitherto Undescribed Membrane of the Eye and Its Significance.**—F. H. VERHOEFF (*Boston Med. and Surg. Jour.*, October 22, 1903).—Verhoeff has observed that the external limiting membrane of the retina is continued at the disk margin and passes into the layer of pigment epithelium. His conclusions are as follows: "In the pigment layer of the retina there is a fenestrated membrane, identical in structure and staining reactions with the limiting external layer of the retina."

"The rods and cones are not nervous elements, but modified ependymal cells, and are analogous to sensory epithelium."

"The limiting membrane of the rosettes of glioma retinae is a fenestrated membrane similar in every way to the membrana limitans externa, and the rosettes correspond to the neuro-epithelium of the normal retina."

"The structure of the limiting membrane of rosettes explains why they assume their characteristic spherical and spiral-like form."

"'Neuro-epithelioma retinae' is no more suitable than 'glioma retinae' for the class of tumors to which these terms have been applied."

---

**The Ocular Complications of Mumps.**—J. H. WOODWARD (*N. Y. and Pa. Med. Jour.*, January 2, 1904).—The writer reviews the recent paper of Antonelli and Le Roux (*Arch. d'Ophtalm.*, October, 1903) who report very various ocular complications in this disease including conjunctivitis, abscess of the lid, keratitis, dacrioadenitis, iritis, hyperemia of the disks, optic neuritis and neuro-retinitis.

The following case observed by Woodward presents some unique features.

The patient was a little girl eleven years old. Tumefaction in the parotid regions persisted after convalescence. On attempting to use the eyes in school there occurred vertigo and momentary failure of vision in the left eye, accompanied by suffusion of the conjunctiva and lachrymation. Five weeks later the left pupil became suddenly and permanently dilated while reading fine print by artificial light.

Examination showed a hazy cornea, dilated pupil, T+. Ophthalmoscopically, blotches in the fundus resembling hemorrhages and a whitish reflex below. V. p. l. The upper field was blind. Anterior sclerotomy was performed, following which the cornea cleared somewhat and an occasional retinal vessel could be seen. Woodward first saw the case about a week later. The pupil was then dilated and immovable, the disk intensely edematous, the veins dilated and tortuous, some of the arteries normal, others quite empty. Two months later the pupil reacted to the brightest illumination, the vitreous contained floating particles and the arteries and veins were entirely obliterated. At the macula was a large white streaked patch and about the disk whitish spots were scattered. Thirteen months later conditions had not changed.



## BOOK REVIEWS.

---

AMERICAN TEXT-BOOK OF SURGERY. For Practitioners and Students. Edited by WILLIAM W. KEEN, M. D., LL. D., F. R. C. S. (Hon.), Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia; and J. WILLIAM WHITE, M. D., John Rhea Barton, Professor of Surgery, University of Pennsylvania, Philadelphia. Fourth edition, thoroughly revised and greatly enlarged. Handsome octavo of 1363 pages, with 551 text-illustrations and 39 full-page plates, many in colors. Philadelphia, New York, London: W. B. Saunders & Company. 1903. Cloth, \$7.00 net; sheep or half morocco, \$8.00 net.

The fact that this large volume represents the fourth edition of the work is, perhaps, the best testimonial of its popularity. Since the appearance of the third edition the book has undergone a thorough revision; and in addition a number of new chapters have been added in the effort to keep up with the advances in surgery. Such new work as that of Crile on blood pressure, Matas on aneurisms and Edebohls on the surgery of what were formerly considered strictly medical affections of the kidney, have necessitated additional chapters. New chapters have been added on such subjects as naval surgery, tropical diseases and the surgical affections of the pancreas. Thus is seen the effect on surgery and surgical writing of the expansion policy of the government. As regards the surgery of the pancreas, much of it has actually been made in the very recent past, hence the book which has it all must be considered as being strictly up to date.

Many of the illustrations are so fine as to excite more than a passing notice; especial reference is made to the full-page plates, which are, many of them, really works of art.

The division of the work into four heads is something quite out of the ordinary and would seem to the reviewer to be a most sensible idea; the heads are named: general surgery, special surgery, regional surgery and operative surgery.

A MANUAL OF THE PRACTICE OF MEDICINE. By A. A. STEVENS, A. M., M. D., Professor of Pathology in the Woman's Medical College of Pennsylvania; Lecturer on Physical Diagnosis in the University of Pennsylvania; Physician to the Episcopal Hospital and to St. Agnes' Hospital; Fellow of the College of Physicians of Philadelphia, etc. Sixth edition, thoroughly revised, enlarged and reset. Post-octavo of 556 pages, illustrated. Philadelphia, New York, London: W. B. Saunders & Company. 1903. Flexible leather, \$2.25 net.

This little volume, of a convenient size and well printed, will doubtless be of use to such as wish an extremely condensed compend of internal



medicine. Just to whom it will appeal seems, however, not quite clear. Physicians one would suppose must need something on a larger scale, and the utility to students of clinical medicine in tablet form is, to say the least, doubtful.

LESIONS OF THE EYE. For the Use of Undergraduate Students. By FRANK L. HENDERSON, M. D. Third edition. Philadelphia: P. Blakiston's Sons & Company, 1012 Walnut street. 1903.

Dr. Henderson's little manual, which now appears in a third edition, is an excellent epitome of those ophthalmic topics which should first be presented to the consideration of the undergraduate student. The author contends that the amount of time allotted to ophthalmology in the majority of our medical schools does not warrant the inclusion, in a first course, of such topics as minute anatomy, the fitting of glasses, skiascopy and ophthalmoscopy, all of which have been intentionally omitted. The assumption is, perhaps, fair enough with regard to all but the last subject—ophthalmoscopy. Dr. Henderson may well "doubt the diagnostic value of an ophthalmoscope in the hands of the average practitioner" (preface), but why should he seek to condemn the future practitioner to an equal disability? The day is not far distant when the internist will demand, as an indispensable part of his diagnostic equipment, at least so much knowledge of the ophthalmoscope and ophthalmoscopy as will enable him to recognize gross lesions of the fundus—*e. g.*, retino-choroidal atrophy, retinal hemorrhages, the blanched disk of optic atrophy, etc. We are building for the future in the training of medical undergraduates of to-day and Dr. Henderson's contention may fairly be regarded as unprogressive.

ATLAS OF THE EXTERNAL DISEASES OF THE EYE. By PROF. DR. O. HAAB, of Zurich. Second edition, thoroughly revised. Edited, with additions, by G. E. DE SCHWEINITZ, A. M., M. D., Professor of Ophthalmology in the University of Pennsylvania. With 98 colored lithographic illustrations on 48 plates, and 232 pages of text. Philadelphia, New York, London: W. B. Saunders & Company. 1903. Price, \$3.00 net.

The excellent and deservedly popular atlas of Prof. Haab now appears in a second American edition which has been thoroughly revised and brought up to date. The first sixty-one pages are devoted to a consideration of the "Examination of the Eye in Disease," the various methods of examination (excluding ophthalmoscopy, which is fully discussed in the author's "Atlas of Ophthalmoscopy and Ophthalmoscopic Diagnosis") being fully described. The rest of the work is concerned with the description of the appearances of many of the diseases of the eye that can be diagnosed by external examination alone. The text is illustrated by ninety-eight beautifully executed chromo-lithographs—the originals being painted in most instances direct from nature by J. Fink of Munich. It is marvelous with what fidelity the tints that characterize the eye in disease have been reproduced. It is not too much to say that a careful study of these pictures will enable a physician wholly



without clinical experience to venture on a diagnosis of any of the conditions depicted.

The translator is to be commended for producing a faithful transcript of the original and at the same time avoiding the German idiom. The judicious critical comments of Prof. de Schweinitz add much to the value of the text.

NERVOSE ZUSTANDE UND IHRE PSYCHISCHE BEHANDLUNG. By DR. O. ROSENBACH. Fischer's Medicin. Buchhandlung. H. Kornfeld, Berlin. C. Stechert, New York.

This book consists of the collection of papers on the psychical treatment of various forms of neuroses written at various times by the author. They are here collected in order to stand the test of whatever criticism they may merit. They thus form a very interesting series of papers on the more common neuroses from the point of view of one with an uncommonly broad grasp of his subject. The most valuable feature of the book is the discussion of the means of differentiating the purely functional symptoms from the organic symptoms of disease. As in most books of this nature, the therapeutic part is of less value for the reason that psychical therapy is, after all, a personal matter or at any rate largely so, and the means that enable one to succeed in a given case will not be of much service in the hands of another. This book can be justly recommended to all those who desire to know something of the conception and the manner of treating diseases of the nervous system of a functional nature.

PRINCIPLES AND PRACTICE OF SURGERY. Designed for Students and Practitioners. By GEORGE TULLY VAUGHAN, M. D. Philadelphia and London: J. B. Lippincott Company. 1903.

This neat book of 569 pages contains all the essential parts of general surgery, given, it is true, in a terse manner, but nevertheless at sufficient length for the edification of the average student. The avowed idea of the author, himself a teacher, has been to furnish a work that will aid the student in preparing himself for examination without burdening him with a mass of technical details, useful only to the practicing surgeon. The price of the book is but \$3.50, another recommendation as far as the student body is concerned.

There are furnished 281 illustrations of fair quality, many of them being taken from other sources however. The subject-matter is divided into two sections, the first dealing with general surgery, the second with the surgery of the regions, so-called. The key-note to the entire work is "be practical," it being apparently the author's idea to get at the meat of each proposition and avoid long discussions.